

Committee on Solar-Terrestrial Physics (SCOSTEP)

## THE FIRST S-RAMP CONFERENCE

Sapporo, Japan; October 2-6, 2000

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# **The First S-RAMP Conference**

**October 2 - 6, 2000: Sapporo, Japan**

**Solar-Terrestrial Environment Laboratory  
Nagoya University**

**Radio Science Center for Space and Atmosphere  
Kyoto University**

Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)  
Ministry of Education, Science, Sports and Culture, Japan (Monbusho)

Committee on Space Research (COSPAR)  
International Association of Geomagnetism and Aeronomy (IAGA)  
International Association of Meteorology and Atmospheric Sciences (IAMAS)  
International Union of Radio Science (URSI)

Society of Geomagnetism and Earth, Planetary and Space Sciences  
Astronomical Society of Japan  
The Japanese Society for Planetary Sciences  
Meteorological Society of Japan



Hokkaido Government  
City of Sapporo  
Sapporo International Communication Plaza Foundation

The Commemorative Association for the Japan World Exposition (1970)  
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14. ABSTRACT

**PROGRAM BOOK:** Welcome, Message from the President of SCOSTEP, Message from the S-Ramp Steering Committee and the Conveners of the First S-Ramp Conference, and Sapporo Welcomes the First S-Ramp Conference. Additionally, includes General Information, Organizers and Program Committees of Symposia/Workshops, Time Schedule, Program, Workshops and Author Index (98 pages)

**ABSTRACTS:**

Tutorials: Solar-Terrestrial Physics -- Past Achievements and Future Opportunities; Global Circulation of the Middle Atmosphere, and Sun-Earth Coupling and Possible Effects on Earth's Climate. Symposia: 19 Abstracts. Workshops: Space Weather Observation in Future, Satellit Anomalies, and April-May 1998/September 1999 Events (464 pages).

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## Program Update

- |              |              |   |
|--------------|--------------|---|
| <b>[S1]</b>  | S1-15        | Withdrawn   |
|              | S1- P05      | Withdrawn   |
|              | S1- P10      | Withdrawn   |
|              | S1- P19      | Withdrawn   |
|              | S1- P20      | Withdrawn   |
|              | S1-P26       | Moved to Oral Session: S1-15 (Tuesday, Oct. 3, 16:40 )  |
| <b>[S2]</b>  | S2-08        | Withdrawn   |
| <b>[S3]</b>  | S3-P16       | Withdrawn   |
|              | S3-P18       | Withdrawn   |
|              | S3-P24       | Withdrawn   |
|              | S3-P29       | Withdrawn   |
| <b>[S4]</b>  | S4-02        | To be presented by S. JURAC   |
| <b>[S5]</b>  | S5-05        | Withdrawn   |
|              | S5-P01       | Withdrawn   |
| <b>[S7]</b>  | S7-02        | Withdrawn   |
|              | S7-P08       | Moved to Oral Session: S7-02 (Monday, Oct. 2, 9:50 )  |
| <b>[S8]</b>  | S8-20        | Withdrawn   |
| <b>[S9]</b>  | S9-P01       | Withdrawn   |
| <b>[S11]</b> | Chairpersons | Exchanged between L. Zelenyi and H. Kawano  |
|              | S11-02 Title | Changed to<br>PUNCTUATED EVOLUTION HYPOTHESIS OF OPEN MANY-BODY SYSTEM  |
|              | S11-03       | Withdrawn   |
|              | S11-P03      | Withdrawn   |
|              | S11-P13      | Moved to Oral Session: S11-03 (Thursday, Oct. 5, 14:40 )  |
| <b>[S12]</b> | S12-15       | Moved to Poster Session: S12-P47  |
|              | S12-P02      | Withdrawn   |
|              | S12-P05      | Withdrawn   |
|              | S12-P47      | Late Abstract<br>EXPERIMENTAL OBSERVATIONS OF ULF WAVES UTILISING THE CUTLASS<br>BISTATIC HF RADARS AND THE TROMSO HEATER<br>D. M. WRIGHT, T. K. Yeoman, J. A. Davies, T. R. Robinson (Solicited) |
|              | S12-P47      | Moved to Oral Session: S12-15 (Friday, Oct. 6, 11:50 )  |
| <b>[S14]</b> | S14-14       | Withdrawn   |
|              | S14-P01      | Moved to Oral Session: S14-14 (Monday, Oct. 2, 15:40)   |

- [S15]** S15-02      Withdrawn  
           S15-04      Withdrawn  
           S15-P01     Moved to Oral Seccion: S15-04 (Thursday, Oct. 5, 15:40)  
           S15-P02     Moved to Oral Session: S15-02 (Thursday, Oct. 5, 14:30)
- [S16]** S16-08      To be presented by M. J. Taylor  
           S16-P11     Withdrawn
- [S17]** S17-14      Withdrawn  
           S17-23      Moved to Poster Session: S17-P01  
           S17-P01     Moved to Oral Session: S17-14 (Tuesday, Oct. 3, 16:27)  
           S17-P13     Moved to Oral Session: S17-23 (Thursday, Oct. 5, 16:44)
- [S18]** S18-P07      Withdrawn
- [S19]** S19-07      Withdrawn  
           S19-11      Withdrawn  
           S19-P05     Withdrawn  
           S19-P06     Withdrawn  
           S19-P07     Withdrawn  
           S19-P10     Withdrawn  
           S19-P18     Moved to Oral Session: S19-07 (Friday, Oct. 6, 12:10)  
           S19-P19     Moved to Oral Session: S19-11 (Friday, Oct. 6, 15:40)
- [W1]** W1-09      Withdrawn  
           W1-P02      Moved to S1-P26 (Wednesday, Oct. 4, 8:30-)
- [W2]** W2-03      Moved to W2-05 (Thursday, Oct. 5, 17:20)  
           W2-05      Moved to W2-03 (Tuesday, Oct. 3, 17:40)
- [W3]** W3-09      Late Abstract (Tuesday, Oct. 3, 19:20; after W3-01)  
                       POWERING THE MAGNETOSPHERE: MAY 4, 1998  
                       C. J. FARRUGIA, G. Lawrence (Solicited)
- W3-10      Late Abstract (Tuesday, Oct. 3, 19:40; after W3-09)  
                       MAGNETOSPHERIC RESPONSES TO SOLAR DRIVERS IN APRIL-MAY 1998  
                       D. N. BAKER
- W3-11      Late Abstract (Tuesday, Oct. 3, 20:00; after W3-10)  
                       IONOSPHERIC AND THERMOSPHERIC RESPONSE TO THE MAY 1998 STORM  
                       G. LU, B.A. Emery, and A.D. Richmond (Solicited)

## Hearty Welcome



On behalf of the 1.8 million citizens of Sapporo, I would like to welcome you to Sapporo to participate in The First S-RAMP Conference. As you know, Sapporo represents the political, economic, academic, and cultural center of Hokkaido.

The Sun-Earth relationship is important to Sapporo in many ways. People in Hokkaido sometimes enjoy red auroras when solar activity is high, such as this year. We understand that auroras are one of the beautiful messages that the Sun keeps sending to the inhabitants of this planet. In addition, the depletion of the ozone layer is a widely known issue involving the Sun-Earth relationship. Various countermeasures have been sought to solve this problem. Scientists have pointed out that Hokkaido will be the first to come under the direct influence of this depletion, and it has been a matter of growing concern among the citizens of Sapporo. Therefore, I believe that it is of significance for Sapporo to host this international conference that focuses on solar-terrestrial issues including space weather.

With the creation of "a hub city in the northern region" and the realization of "city life for the new age" as its basic philosophy, the City of Sapporo endeavors to generate an attractive and active urban space. Boasting harmony between a modern urban environment and nature, Sapporo shows the colorful expression of the changing seasons. This time of year, there is a dynamic transition from the pleasant summer to the snowy winter. I hope that you can enjoy the beauty of mountain leaves changing their colors as well as the delicacies that the autumn of the northern land has to offer. I also hope you learn to love our city, Sapporo.

It is my hearty wish that this conference will be greatly successful. I hope that your stay in Sapporo will be personally a pleasant one to remember. Welcome all.

A handwritten signature in cursive script that reads "Nobuo Katsura".

Nobuo Katsura  
Mayor of Sapporo

## CONVENERS

Prof. Y. Kamide  
Solar-Terrestrial Environment Laboratory  
Nagoya University  
Toyokawa, Japan

Prof. H. Matsumoto  
Radio Science Center for Space  
and Atmosphere  
Kyoto University  
Uji, Japan

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K. Yumoto

S-RAMP (STEP - Results, Applications and Modeling Phase) is a five year program organized by the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP), which extends over the period 1998-2002. The three major objectives of S-RAMP are:

1. To facilitate and enable the detailed study of the STEP data base so as to increase our understanding of the physical mechanisms responsible for coupling the various regions of the Sun-Earth system.
2. To facilitate and enable the effective transfer of data and information among S-RAMP researchers and to encourage feedback among the experimental, theoretical and computer modeling communities.
3. To demonstrate the scientific findings and their societal benefits to funding agencies, the media and the general public so as to generate support for future scientific programs, cross-disciplinary studies and practical applications of knowledge of the Sun-Earth system.

The First S-RAMP Conference is held in the city of Sapporo, the capital of the Japanese Prefecture of Hokkaido. The meeting is devoted to the presentation of initial results from the follow-on to the Solar-Terrestrial Energy Program (STEP). This Sapporo Conference is the first of two major meetings planned for the S-RAMP period. The Conference takes place at Royton Sapporo (*oral sessions*), and Sapporo Media Park (*poster sessions*).

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## Message from the President of the Scientific Committee on Solar-Terrestrial Physics

Marvin A. Geller

At the occasion of this S-RAMP Conference, it is good to reflect a bit on SCOSTEP's past, present, and future. The concept of SCOSTEP grew out of the IGY. At that time, the scientific community was getting its first in situ look at the earth's space environment, and a need was seen for an organization that would aid the international solar-terrestrial community in mounting its research programs that combined measurements from space and from Earth. Programs like the IQSY, IMS, SMY, and MAP followed under SCOSTEP leadership. All of these programs have depended on full international participation, and have received significant financial support from sponsoring agencies in each participating country. We especially take advantage of this first S-RAMP Conference meeting in Sapporo, Japan to acknowledge the generous and significant financial, infrastructure, and scientific support provided by the government, academic community, and scientists of Japan to all of SCOSTEP's programs.

SCOSTEP's most ambitious program to date was its STEP (Solar-Terrestrial Energy Program) that sought to develop a scientific understanding of the energy and mass flow from the sun to the Earth, along with its consequences. Some might argue that STEP was too ambitious for its time. Certainly, a good detailed understanding of the interactions among the various regions of the solar-terrestrial environment still awaits; and we are just reaching the point where we can test our ability to predictively model conditions given the suite of satellite observations now possible. On the other hand, STEP built interactions between scientific communities that must precede a holistic view of the solar-terrestrial system. S-RAMP seeks to capitalize on the data, models, and community interactions that were developed during the STEP period.

SCOSTEP is now involved in planning for its future programs that lie beyond its present S-RAMP, ISCS, PSMOS, and EPIC programs. This first S-RAMP conference gives us a good opportunity to survey what we have learned about the solar-terrestrial system during STEP and a few years beyond. I hope that you will all consider what you feel are the next logical steps in international solar-terrestrial physics where SCOSTEP can contribute. During the conference week, there will be an open meeting on SCOSTEP's long range plans. A very preliminary outline of this plan is already in existence, but your reactions and thoughts will be crucial in shaping the future of SCOSTEP and its programs as we interact with other ICSU bodies and with international and national programs of the future.



## Message from the Chair of the S-RAMP Steering Committee

Daniel N. Baker



The Solar-Terrestrial Energy Program (STEP) was an integrated, comprehensive effort to understand the coupled Sun-Earth system. STEP ran from 1990 through 1997 and had working groups devoted to studying the Sun, the interplanetary medium, the terrestrial magnetosphere, and ultimately the Earth's upper and middle atmosphere. STEP was quite successful in studying the physical linkages in this grand, complex system, but it also left several jobs undone. It was SCOSTEP's goal in the follow-on to STEP to take Sun-Earth studies to the next level.

The STEP-Results, Applications, and Modeling Phase (S-RAMP) program is designed to capitalize on the vast data sets and powerful modeling techniques that were developed under STEP auspices. S-RAMP is scheduled to run from 1998 through 2002. Because so many wonderful new tools (spacecraft and ground systems) have come "online" during the initial portion of the S-RAMP interval, our Steering Committee has also wholeheartedly embraced using new solar-terrestrial data and methods developed in the post-STEP era. S-RAMP wants to accomplish three main goals:

- Enable detailed understanding of Sun-Earth coupling mechanisms;
- Facilitate effective information transfer between experimentalists, theoreticians, and modelers; and
- Demonstrate the successful benefits of the STEP endeavor to funding agencies, the media, and the general public.

It is with great pleasure that I can report that the worldwide community of space scientists has enthusiastically embraced the S-RAMP program. Solar-terrestrial researchers from many nations have provided time, energy, data, and scientific analysis to make S-RAMP a success even at this midpoint in the program. It is with considerable gratitude and pride that I can say that Japanese scientists have played a particularly strong leadership role. The analysis of data acquired by Japanese scientists has been crucial to the STEP and S-RAMP success. Perhaps even more notably, the modeling and numerical simulation work done in Japan under S-RAMP auspices has been outstanding.

On behalf of S-RAMP, I wish to thank the institutions and agencies of Japan for their tremendous contributions. In particular, I want to thank these institutions and agencies for providing the resources to permit the S-RAMP Conference to be held in Sapporo. The hundreds of scientists in attendance at this great conference, and the many other researchers unable to attend, are deeply beholden to Japan for its strong support of our international research efforts.



## From the Conveners of The First S-RAMP Conference

Yohsuke Kamide

Hiroshi Matsumoto



It gives us great pleasure to have such distinguished scientists from around the world here in Sapporo for The First S-RAMP Conference. On behalf of the Japanese committee members who have prepared this Conference, we wish to extend our warm welcome to all of you to the capital of Hokkaido Prefecture. It should be noted that this Sapporo Conference is the first of two major meetings which have been planned for the S-RAMP's five year interval. It is our honor and pleasure to host the first of this series in Japan.

This Conference, which is held in the midst of the five-year international program, S-RAMP, has several unique features worth mentioning. First, this Conference is an attempt to enhance our understanding of the physical mechanisms responsible for coupling the various regions in the Sun-Earth system by facilitating detailed studies using the STEP (Solar-Terrestrial Energy Program) database. Second, this Conference will enable the effective flow of data and information throughout the wide S-RAMP community and it will encourage all modes of exchange among experimental, theoretical, and computer modeling scientists. The third point of importance for getting together in this endeavor, which we should not forget, is the significance of conveying our exciting findings to the general public and to the media as well as to our funding agencies. In so doing, we expect to maintain current support and generate new support to enhance our scientific programs, our cross-disciplinary studies, and the practical applications of this knowledge of the sun-earth system to various important areas in society.

Altogether, The First S-RAMP Conference represents a unique opportunity for us to recognize and to enhance the major scientific advances that have resulted from the effective usage of the STEP database. We are confident that this Conference will be a fruitful meeting by all measures. Certainly, active discussions throughout the lectures, workshops, and symposia, and among other interactive sessions, are expected during this Conference.

Special thanks are due to the Program Committee and the Scientific Organizers led by Professor Y. Omura, who handled more than 850 abstract submissions very efficiently. It is also our great pleasure to express our deepest thanks to the Local Organizing Committee chaired by Professor T. Araki. Their hard work, particularly during the last several months, is greatly appreciated.

We wish you all a special and enjoyable stay in Sapporo, from both academic and personal points of view. Welcome to The First S-RAMP Conference and to this beautiful city, Sapporo.

Illustrations: Ayami Kitajima and H. Matsumoto

ようこそ札幌へ

## SAPPORO WELCOMES THE FIRST S-RAMP CONFERENCE

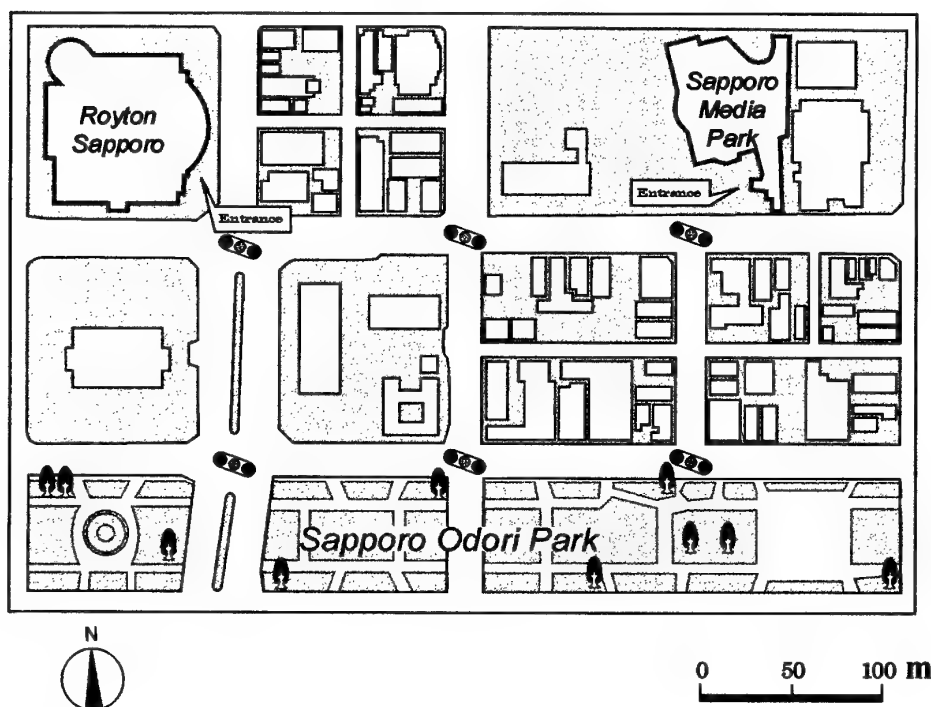
The Japanese islands provide Sapporo with an excellent scientific environment as well as a beautiful setting for The First S-RAMP Conference. The city of Sapporo, with a population of 1.8 million, is located 43 degrees north in Hokkaido, the second largest island in Japan. Sapporo, the political and economic center of Hokkaido, is the fifth largest city in Japan.

Sapporo's development did not begin in earnest until about 130 years ago. Foreign advisors contributed significantly during the early stages of this development, and as a result, it is not uncommon to find historic architecture that would comfortably fit into any North American or European cityscape. The orderly grid pattern of the city streets attests to this influence.

Various surveys consistently rank Sapporo as one of the most desirable places in Japan to visit and live. The city's striking natural beauty, relaxed character, and abundance of attractions make it easy to understand why. Is your image of Japan one of restless crowds packed into cramped spaces? If so, you obviously have not been to Hokkaido. Sapporo is the ideal convention site, giving visitors ready access to the abundant natural charms of Hokkaido.

The 1972 Winter Olympic Games were successfully held in Sapporo. The campus of Hokkaido University is within easy walking distance of the meeting site in the center of the city. With average October temperatures of 14 degrees C, low humidity, and scant rainfall, Sapporo promises to provide very pleasant meeting conditions.

The Conference will take place at: Royton Sapporo (Oral sessions) and Sapporo Media Park (poster sessions).



# **The First S-RAMP Conference**

## **October 2 - 6, 2000: Sapporo, Japan**

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### **General Information**

#### **Conference Sites**

The Conference will take place at:

Royton Sapporo  
North 1, West 11  
Chuo-ku, Sapporo  
Hokkaido 060-0001, Japan  
(Tel. +81-11-271-2711; Fax +81-11-207-3344)

Sapporo Media Park  
North 1, West 8  
Chuo-ku, Sapporo  
Hokkaido 060-0001, Japan  
(Tel. +81-11-272-8247; Fax +81-11-272-8378)

#### **General Contact**

Any messages to the Local Organizing Committee (LOC) of *The First S-RAMP Conference* during the Conference can be addressed to:

S-RAMP Conference Local Organizing Committee  
c/o Royton Sapporo  
North 1, West 11  
Chuo-ku, Sapporo  
Hokkaido 060-0001, Japan

Tel.: +81-11-207-2000 (011-207-2000 from inside Japan)  
Fax: +81-11-207-2001 (011-207-2001 from inside Japan)

Any messages to participants in *The First S-RAMP Conference* during the Conference should be addressed to: +81-11-207-2002 (011-207-2002 from inside Japan). This phone will be located at the Registration Desk.

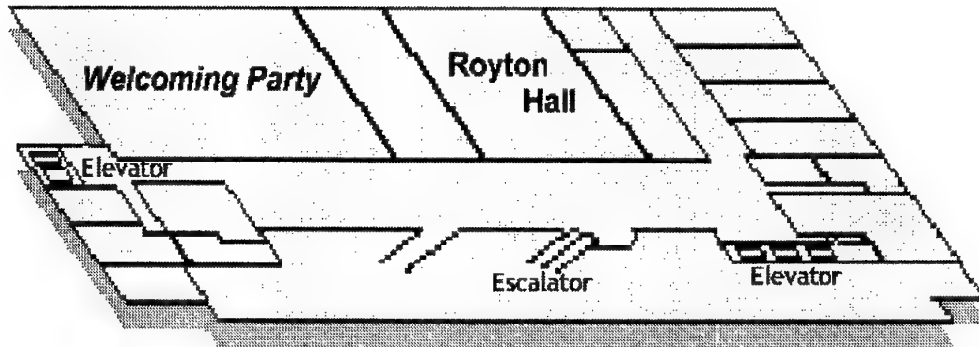
Incoming messages will be placed on information boards in the registration area. E-mail facilities are available in the room next to the LOC office on the second floor of the Royton Sapporo.

#### **Official Language**

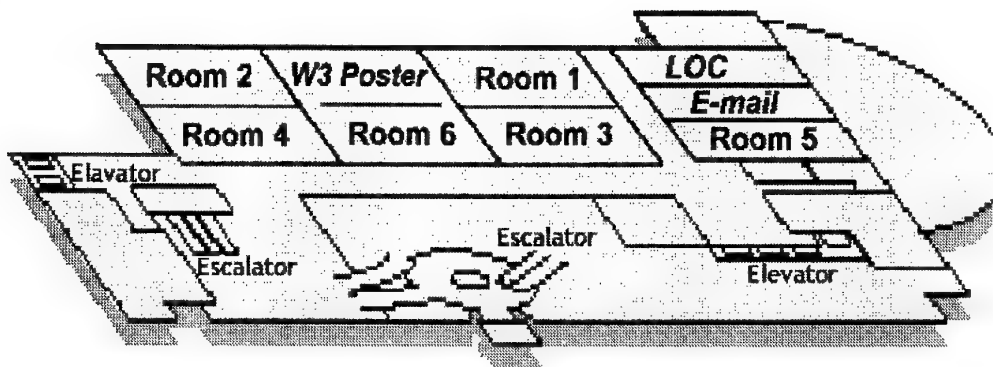
The official language for this Conference is English. Simultaneous interpretation will not be provided.

# Royton Sapporo

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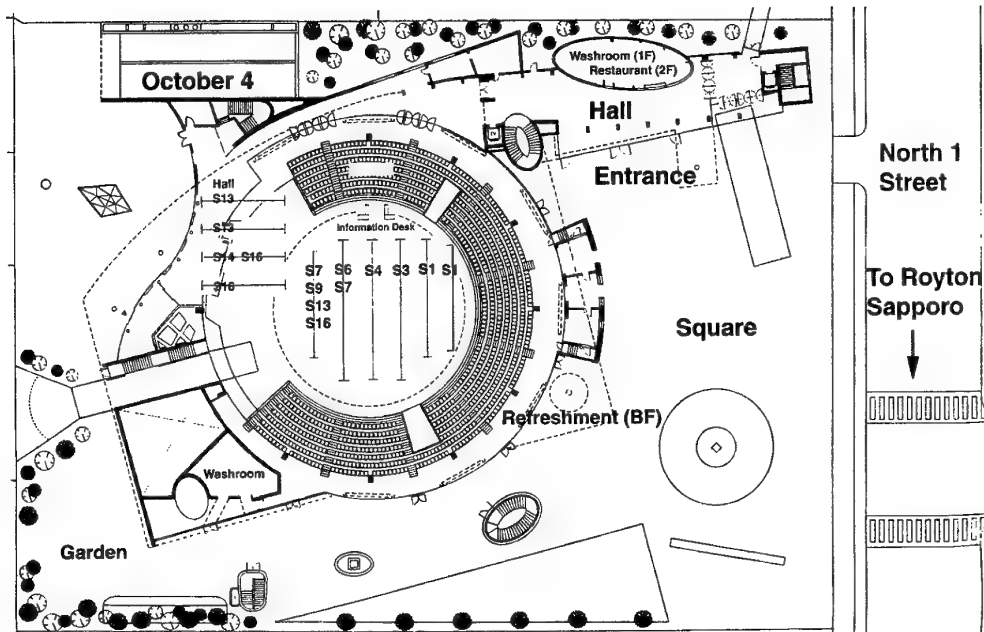


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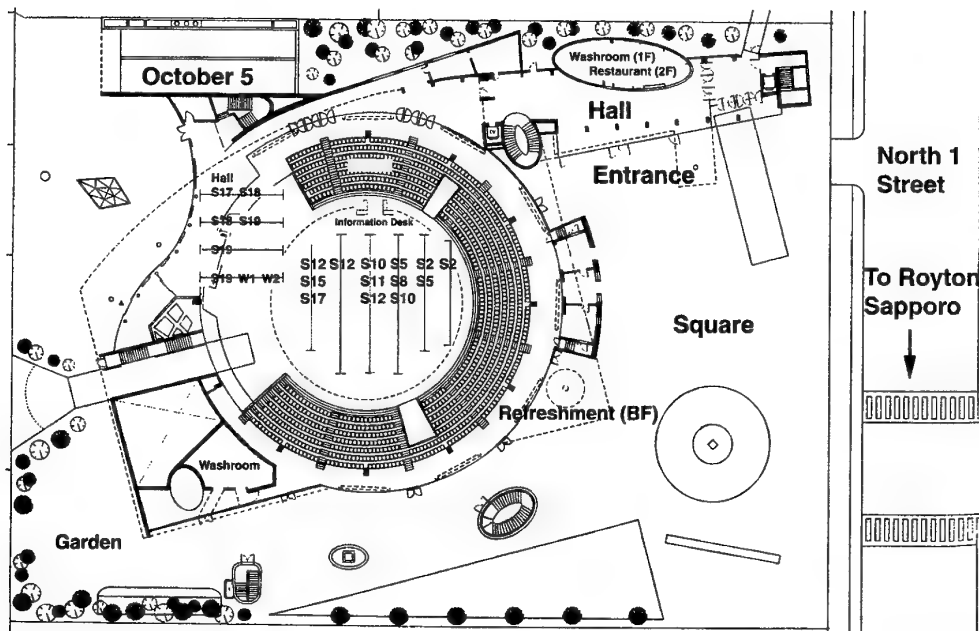


# Sapporo Media Park (Poster Sessions)

Wednesday, October 4



Thursday, October 5





## Local Organizing Committee Office

The Local Organizing Committee (LOC) office is located on the second floor of the Royton Sapporo. The Program Committee is located in the same area. Scientific Organizers and/or Session Chairpersons who have problems with their programs should contact the Program Chair, Professor Y. Omura. Any last-minutes changes in the scientific program must be approved by the Program Chair.

## Registration

All participants must register, paying registration fees. There are the following three categories for registration:

Professional	45,000 yen
Student	30,000 yen
Accompanying Person*	15,000 yen

\*Not attending the scientific program but wishes to participate in social programs, such as the Welcoming Party and the Excursion.

The Registration Desk is located on the second floor of the Royton Sapporo. It will be open during the following hours:

Sunday, October 1:	14:00-1900
Monday, October 2 through Thursday, October 5:	08:30-17:00
Friday, October 6:	08:30-13:00

On-site registration will be handled at the Registration Desk. Payment of the registration fee can be made by credit card (*MasterCard*, *VISA*, or *American Express*) or in cash in Japanese yen.

## Side Meetings

In addition to the main scientific program, there will be the following side meetings:

SCOSTEP Bureau Meeting, organized by J. H. Allen  
9:00-17:00, Sunday, October 1; Room 5

Project for Upgrading Russian AE Stations (*PURAES*), organized by T. Iyemori  
17:00-19:00, Tuesday, October 3; Room 4

SCOSTEP Long-Range Planning Committee (*LRPC*), organized by J. H. Allen  
19:30-21:30, Tuesday, October 3; Room 5

SCOSTEP Bureau Meeting, organized by J. H. Allen  
9:00-15:00, Saturday, October 7; Room 5

## Name Badges

Access to the meeting rooms is restricted to registered S-RAMP Conference participants. It is therefore absolutely necessary to wear the name badge provided at registration at all times.

## Social Events

Conference-related social events are: A Welcoming Party on Monday evening; and A Half-day Excursion on Wednesday afternoon and subsequent Conference Dinner in the evening. All registered participants are invited to these fun events.

### **Monday, October 2; 18:00 - 20:00**

There will be a Welcoming Party to which all Conference registrants and Accompanying Persons are invited by Mayor of the City of Sapporo. This party will be held at the third floor of the Royton Sapporo.

### **Wednesday, October 4 ; 13:30 - 20:00**

This afternoon will be devoted to an Excursion after which the Conference Dinner will take place. The excursion buses will depart from the Royton Sapporo at 13:30 pm and will transport participants to the Historical Village of Hokkaido (or to the Historical Museum of Hokkaido if it rains). From there, the buses will transport participants to the site of the Conference Dinner at the Sapporo Beer Garden and will return to the Royton Sapporo after the all-you-can-eat-and-drink meal around 20:15. Informal dress is strongly recommended: you can guess why.

13:30 Leave the lobby of the Royton Sapporo

14:30 Historical Village of Hokkaido

<You will explore a restored village, which will show you what pioneer life was like in Hokkaido.>

*In case of rain, we will visit the Historical Museum of Hokkaido instead.*

18:00 Dinner at the Sapporo Beer Garden  
Sapporo beer and barbecue of beef, seafood, etc.

20:00 Leave the Sapporo Beer Garden

20:15 Arrive at the Royton Sapporo

*Optional Tour to the Observatory of Mt. Moiwa - weather permitting*

For those who wish to experience a grand view of city lights of Sapporo from the top of a mountain, the buses will leave the dinner place at 19:45 for the top of Mt. Moiwa, a symbol of the City of Sapporo, and return to the Royton Sapporo at 21:30.

<There is no need to sign up for this tour in advance. Please feel free to join.>

19:45 Leave the Sapporo Beer Garden

20:30 Arrive at the Observatory of Mt. Moiwa

21:30 Arrive at the Royton Sapporo

*This Optional Tour will be canceled if it rains.*

#### *Excursion*

Historical Village of Hokkaido  
Konopporo, Atsubetsu-cho  
Atsubetsu-ku, Sapporo  
Hokkaido 004-0006  
(Tel. +81-011-898-2692; Fax +81-011-898-2694)

#### *Dinner*

Sapporo Beer Garden  
North 7, East 9  
Higashi-ku, Sapporo  
Hokkaido 065-0007  
(Tel. +81-011-742-1531; Fax +81-011-722-7326)

## **Accompanying Persons' Programs**

Details about the Accompanying Persons' Programs will be posted in the registration area at the Royton Sapporo. Sign-up is required.

### ***Guided Tour of Hokkaido University Campus***

Hokkaido University was originally established in 1876 as Sapporo Agricultural College, and its campus is a very popular tourist spot. The Farm at the School of Agriculture is an Important National Cultural Property. The Poplar Promenade is a fine example of Hokkaido's magnificent natural beauty.

Sites of visit: Museum of Hokkaido University, Bronze bust of Dr. W. S. Clark (First Vice President of the University), Poplar Promenade, Other historical buildings  
Date: Tuesday, October 3  
Time: 10:00 - 11:30 am  
Meeting Place: Registration Area of the Royton Sapporo  
Fee: Free

The walk will be canceled if it rains. Cancellation will be announced on the message board at the registration area.

### ***Guided Tour of "Red Bricks" and the Botanical Gardens***

The landmark, "Red Bricks," is the name given to the Old Hokkaido Government Building built in 1888. It was modeled after the Massachusetts State House. The Botanical Gardens (an entrance fee of 400 yen is required) is part of the School of Agriculture, Hokkaido University, and contains a virgin forest, an example of early Hokkaido homes, a green house with tropical plants, and a museum.

Sites of visit: Former Hokkaido Government Building "Red Bricks," and Botanical Gardens of Hokkaido University  
Date: Friday, October 6  
Time: 10:00 - 11:30 am  
Meeting Place: Registration Area of the Royton Sapporo  
Fee: 400 yen

The walk will be canceled if it rains. Cancellation will be announced on the message board at the registration area.

### ***Guided Tour for Japanese Traditions***

This program provides exposure to some Japanese traditions. Half-day courses will be provided on:

#### ***(A) Japanese Flower Arrangement and Traditional Tea Ceremony***

Date: Tuesday, October 3  
Time: 1:00 - 4:30 pm  
Meeting Place: Registration Area of the Royton Sapporo  
Fee: 2,000 yen

*(B) Traditional Japanese Kimono Wearing (or Japanese Calligraphy for male) and Origami Paper Craft*

Date: Friday, October 6  
Time: 1:00 - 4:30 pm  
Meeting Place: Registration Area of the Royton Sapporo  
Fee: 2,000 yen

These two tour courses (A) and (B) are organized with the cooperation of the volunteers from the Sapporo International Communication Plaza Foundation.

### **Optional Tours**

Please sign up for each tour at the Travel Desk. Each tour will be canceled if the number of the participants does not reach 25.

#### **Otaru Harbor Tour**

Thursday, October 5

Fee: 6,800 yen (Sushi dinner included); 4,300 yen (Dinner not included)

13:30 Leave the registration area at the Royton Sapporo  
Hokkaido Shrine  
Okurayama Jump Hill  
15:30 Arrive in Otaru City  
<Free time>  
Please enjoy exploring the harbor city. The Glass studios, a museum of music boxes, and the Canal are the sights worth seeing.  
17:30 Meet at an assigned place  
Dinner at a Sushi restaurant  
18:30 Leave Otaru  
20:15 Arrive at the Royton Sapporo

#### **Usu Volcano Tour**

Saturday, October 7

Fee: 8,800 yen (Japanese style lunch included)

9:30 Leave the registration area at the Royton Sapporo  
The Nakayama Pass  
12:00 Arrive at Lake Toya  
View the Volcano Usu from a pleasure boat  
12:45 Leave Lake Toya  
13:00 Arrive at the foot of Mt. Showa-shinzan  
<Lunch>  
14:00 Leave Mt. Showa-shinzan  
The Orofure Pass  
15:00 Arrive at the Hell Valley in Noboribetsu  
15:30 Leave the Hell Valley  
16:30 Stop-by at the Chitose Airport  
18:00 Arrive at the Royton Sapporo

### Summary of Fun Projects for the S-RAMP Conference

	<i>Morning</i>	<i>Afternoon</i>	<i>Evening</i>
<i>Monday</i>			Welcoming Party*
<i>Tuesday</i>	Hokkaido Univ.#	Flower/Tea#	
<i>Wednesday</i>	(1/2-day City Tour)	Excursion*	Dinner Party*
<i>Thursday</i>	(1/2-day City Tour)	(Otaru Harbor and Sushi Tour)	
<i>Friday</i>	Botanical Garden#	Kimono/Origami#	
<i>Saturday</i>	(All day: Usu Volcano Tour stopping at the airport on the way back)		

\*Included in the registration fee

#Free or with nominal fee

( ): Optional

### SCOSTEP's 10th Quadrennial STP Symposium: June 18-22, 2001

"2001: A Space Science Odyssey" is the title and theme of SCOSTEP's 10th Quadrennial STP Symposium (STP-10) scheduled for June 18-22, 2001, at the Rain Tree Plaza Conference Center, 1900 Ken Pratt Blvd., Longmont, Colorado, U.S.A.

The STP-10 meeting will be held jointly with the annual CEDAR (Coupling, Energetics, and Dynamics of Atmospheric Regions) meeting that is sponsored by the US National Science Foundation. A joint program has been roughed out with SCOSTEP arranging one or two invited tutorial talks each day, integrated with solicited and contributed papers and poster sessions. In general, CEDAR will meet separately in workshop sessions each afternoon.

At this time an ISCS Workshop is being planned during the week before STP-10, and a PSMOS Workshop is also being developed. The SCOSTEP Bureau will meet on Sunday, June 17, 2001, and again on Sunday, June 24. There will be a General Meeting of National Adherent Representatives, Scientific Discipline Representatives, Bureau members, and others interested on Saturday, June 23. This is the regular meeting held every two years at which the 2-year budget is approved, national STP reports are presented, and leaders of SCOSTEP scientific programs report to the STP community about their accomplishments. The meeting in 2001 is especially important because it will occur some 18 months before the end of all current SCOSTEP programs (e.g. S-RAMP, ISCS, PSMOS, and EPIC). We anticipate that action will be taken in respect to recommendations from the Long-Range Planning Committee (LRPC) concerning what future program(s) SCOSTEP may implement on behalf of ICSU bodies.

## Scientific Sessions

A total of 3 tutorial lectures, 19 symposia, and 3 workshops, as well as side meetings and other events will take place in the week of October 2-6, 2000. Each symposium/workshop will consist of oral and poster sessions.

All oral sessions and tutorial lectures will be held in meeting rooms on the second and third floors, respectively, of the Royton Sapporo. All but W3 poster sessions will be at Sapporo Media Park, located one-block east of the Royton Sapporo, on Wednesday and Thursday mornings. Poster papers of W3 will be displayed in an open area of Room 6 of the Royton Sapporo. The three tutorial lectures will be held on the Tuesday, Thursday and Friday mornings (8:30-9:30).

Oral sessions begin at 9:30 in the morning and 14:00 in the afternoon. There will be 6 or 7 concurrent sessions. Workshops and side meetings will be on Tuesday and Thursday evenings.

The names of the presenting authors are given in CAPITAL LETTERS in the symposia and workshop programs.

## Instructions for Presentations

(1) In each oral session room, two overhead projectors and screens are available. A computer display projector will also be available, but no computer will be provided. The connection and the compatibility with your computer must be tested prior to the session. If you need a slide projector and/or a VCR, you are requested to contact the LOC office well in advance.

(2) For the poster sessions on Wednesday and Thursday mornings, posters should be put up between 7:30 and 8:30. The size of each poster board is 1.2 m (wide) by 2.1 m (high). Please plan your exhibit to fit this space. The paper number will be indicated on the boards. Pins, tapes, and scissors for mounting posters will be supplied at the Information Desk in the poster area. Posters must be removed by 12:30 on Wednesday and 13:00 on Thursday. Vending machines for refreshments are available in the poster presentation area, so that the area may be used as a place for informal discussions.

(3) Posters in Workshop, W3, should be put up during lunch time, and removed by 21:30 on Tuesday and Thursday.

(4) The Conference Rooms are strictly "No Smoking." Smoking is permitted only in a designated area.

## Publications

A collection of review papers, at least one paper from each symposium, will be published in a special issue of the Journal of Atmospheric and Solar-Terrestrial Physics (*JASTP*).

The following are the titles of the proposed review papers:

- S1: Space Weather Prediction Techniques
- S2: Space Weather: A Maturity Test of Solar-Terrestrial Physics
- S3: Recent Progress in the Observations and Modeling of Coronal Holes  
CMEs: How Do the Puzzle Pieces Fit Together?
- S4: Interplanetary Disturbances
- S5: Solar Wind Effects on Ionospheric Convection
- S8: Current Understanding of Ring Current Dynamics during Magnetic Storms
- S9: Inner Magnetosphere Energetic Particle Dynamics: Recent Accomplishments and Objectives
- S10: Magnetic Reconnection: Theory and Simulations
- S11: Cross-scale Coupling in the Inner Magnetosphere  
Cross-scale Coupling in the Magnetotail
- S13: Auroral Dynamics  
Waves and Solitary Structures Associated with Aurora
- S19: Active Experiments with High-speed Injections in Space  
A Review of Current Collection by Probes and Electrodes in Space Plasmas

The authors of these papers will be notified about the deadline for submission of the final manuscript.

## SCOSTEP's On-Going Programs

S-RAMP (STEP-Results, Applications and Modeling Phase) 1998-2002 was created to take STEP results and combine data and models in ways that did not happen during STEP, with the objective of verifying the overall Sun-Earth Connection picture. To take advantage of the improved array of STP satellites, the availability of new models, the continued improvement of ground-based observing networks, and the new data and product dissemination capabilities arising from the Internet and World-Wide Web, S-RAMP initiated some new STEP-like studies in years after STEP ended.

ISCS (International Solar Cycle Study) 1998-2002 is a smaller, more focused STP disciplinary post-STEP program. It looks mainly at the Sun and solar processes, but aspires to consider effects of solar activity at Earth and in near-Earth space as part of the justification to continue solar scientific programs. It is making abundant use of new satellites.

PSMOS (Planetary Scale Mesopause Observing System) 1998-2002 is a smaller, more focused STP disciplinary post-STEP program. It has the objective to better understand dynamic processes in the atmosphere. This includes atmospheric variability, long-term trends, and improved models. An important part is the creation of an adequate global network of observing sites taking standardized measurements of phenomena.

EPIC (Equatorial Processes Including Coupling) 1998-2002 is a smaller, more focused STP disciplinary post-STEP program. Its purpose is to provide a coordinated international observation program, uniform data processing, and archival/dissemination of data and products at a central facility to support study of convective processes and influences on the Atmosphere-Ionosphere system in equatorial regions.

# Organizers and Program Committees of Symposia/Workshops

## **S1: Space Weather: Prediction Techniques**

Organizers: Thomas R. Detman (NOAA/SEC, USA; [tdet@sec.noaa.gov](mailto:tdet@sec.noaa.gov))  
Henrik H. Lundstedt (Swedish Institute of Space Physics, Sweden; [henrik@astro.lu.se](mailto:henrik@astro.lu.se))  
Program Committee: H. Coffey, J. Freeman, T. Hoeksema, J. Chen, R. L. McPherron, R. Thompson, D. Vassiliadis, and S. Watari

## **S2: Space Weather**

Organizers: Hannu E. J. Koskinen (Finnish Meteorological Institute, Finland; [hannu.koskinen@fmi.fi](mailto:hannu.koskinen@fmi.fi))  
Nicola Fox (NASA/GSFC, USA; [nicola.fox@gsfc.nasa.gov](mailto:nicola.fox@gsfc.nasa.gov))  
Program Committee: E. Daly, J. Luhmann, H. Singer, T. Tanaka, and P. Wilkinson

## **S3: CMEs and Coronal Holes**

Organizers: Edward W. Cliver (AFRL, USA; [cliver@plh.af.mil](mailto:cliver@plh.af.mil))  
Takashi Watanabe (Ibaraki University, Japan; [watanabe@env.sci.ibaraki.ac.jp](mailto:watanabe@env.sci.ibaraki.ac.jp))  
Program Committee: V. Bothmer, W. Gonzalez, K. Harvey, T. Hoeksema, H. Hudson, N. Nitta, S. Plunkett, and S. T. Wu

## **S4: Interplanetary Disturbances**

Organizers: Bruce T. Tsurutani (JPL, USA; [btsurutani@jplsp3.jpl.nasa.gov](mailto:btsurutani@jplsp3.jpl.nasa.gov))  
Rainer W. Schwenn (Max-Planck Institut für Aeronomie, Germany; [schwenn@linmpi.mpg.de](mailto:schwenn@linmpi.mpg.de))  
Program Committee: W. Gonzalez, A. Lazarus, R. Lepping, J. Luhmann, K. Marubashi, D. Reames, B. Sanahua, and O. Verkhogladova

## **S5: Solar Wind Effects on Ionospheric Convection**

Organizers: Gang Lu (HAO/NCAR, USA; [ganglu@ncar.ucar.edu](mailto:ganglu@ncar.ucar.edu))  
Stanley W. H. Cowley (Leicester University, UK; [swhc1@ion.le.ac.uk](mailto:swhc1@ion.le.ac.uk))  
Program Committee: R. Greenwald and T. Moretto

## **S6: Comparison of Observations and Simulations of Global Magnetospheric Structure**

Organizers: Gordon Rostoker (STEL, Nagoya University, Japan; [rostoker@stnet1.stelab.nagoya-u.ac.jp](mailto:rostoker@stnet1.stelab.nagoya-u.ac.jp))  
Tuija I. Pulkkinen (Finnish Meteorological Institute, Finland; [tuija.pulkkinen@fmi.fi](mailto:tuija.pulkkinen@fmi.fi))  
Program Committee: J. Bim, N. Maynard, T. Nagai, R. Nakamura, G. Parks, J. Raeder, and J. Sauvaud

## **S7: Tail Plasma Flows and Ionospheric Consequences**

Organizers: Vassilis Angelopoulos (University of California, Berkeley, USA; [vassilis@ssl.berkeley.edu](mailto:vassilis@ssl.berkeley.edu))  
Tsugunobu Nagai (Tokyo Institute of Technology, Japan; [nagai@geo.titech.ac.jp](mailto:nagai@geo.titech.ac.jp))  
Program Committee: W. Baumjohann, D. Fairfield, M. Hoshino, J. Samson, V. Sergeev, and K. Shiokawa

## **S8: Storm-Time Ring Current**

Organizers: Ioannis A. Daglis (National Observatory of Athens, Greece; [daglis@creator.space.noa.gr](mailto:daglis@creator.space.noa.gr))  
Janet U. Kozyra (University of Michigan, USA; [JUkozyra@srvr5.engin.umich.edu](mailto:JUkozyra@srvr5.engin.umich.edu))  
Program Committee: J. Horwitz, J. Lemaire, R. Lundin, and T. Moore



**S9: Energetic Particle Dynamics in the Inner Magnetosphere**

Organizers: Geoffrey D. Reeves (Los Alamos National Laboratory, USA; reeves@lanl.gov)  
Takahiro Obara (CRL, Japan; T.Obara@crl.go.jp)  
Program Committee: B. Anderson, D. Baker, A. Chan, S. Elkington, J. Fennell, M. Grande, J. Kozyra, J. Lemaire, and B. Wilken

**S10: Magnetic Reconnection: Theory and Simulations**

Organizers: Jörg Büchner (Max-Planck Institut für Aeronomie, Germany; buechner@linmpi.mpg.de)  
Toshio Terasawa (University of Tokyo, Japan; terasawa@geoph.s.u-tokyo.ac.jp)  
Program Committee: G. Belmont, A. Bhattacharjee, D. Biskamp, J. Drake, M. Hesse, M. Hoshino, M. Scholer, K. Shibata, and L. Zelenyi

**S11: Cross-Scale Coupling: Observations and Theories**

Organizers: Lev M. Zelenyi (Russian Academy of Sciences, Russia; lzelenyi@iki.rssi.ru)  
Hideaki Kawano (Kyushu University, Japan; hkawano@geo.kyushu-u.ac.jp)  
Program Committee: J. Borovsky, Y. Galperin, J. Horwitz, M. Hoshino, A. Lui, T. Sato, and P. Veltri

**S12: ULF and VLF Waves in the Magnetosphere**

Organizers: Richard Home (British Antarctic Survey, UK; RH@pcmail.nerc-bas.ac.uk)  
Kiyohumi Yumoto (Kyushu University, Japan; yumoto@geo.kyushu-u.ac.jp)  
Program Committee: B. Anderson, R. Anderson, M. Engebretson, B. Fraser, V. Pilipenko, J. Samson, A. Smith, R. Thorne, U. Villante, M. Vellante, and T. Yeoman

**S13: Aurora Dynamics and Plasma Wave Emissions**

Organizers: Kristof Stasiewicz (Swedish Institute of Space Physics, Sweden; ks@ifu.se)  
Hirotugu Kojima (Kyoto University, Japan; kojima@kurasc.kyoto-u.ac.jp)  
Program Committee: M. Blanc, J. Borovsky, C. Cattell, E. Friis-Christensen, K. Hashimoto, M. Lockwood, T. Mukai, and G. Parks

**S14: Wave-Particle Interactions at Shocks and Boundary Layers**

Organizers: Bertrand Lembège (CRPE CNET, France; bertrand.lembège@cetp.ipsl.fr)  
Tohru Hada (Kyushu University, Japan; hada@esst.kyushu-u.ac.jp)  
Program Committee: D. Burgess, V. Krasnoselskikh, M. Scholer, T. Terasawa, and B. Tsurutani

**S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena**

Organizers: David Schriver (UCLA IGPP, USA; dave@igpp.ucla.edu)  
Masaki Fujimoto (Tokyo Institute of Technology, Japan; fujimoto@geo.titech.ac.jp)  
Program Committee: K. Baker, J. Borovsky, T. Chang, D. Delcourt, P. Helinger, N. Omidi, V. Peromian, V. Sotnikov, and R. Treumann

**S16: Ionosphere-Thermosphere-Mesopause Coupling**

Organizers: Timothy L. Killeen (University of Michigan, USA; tkilleen@umich.edu)  
Hiroshi Fukunishi (Tohoku University, Japan; fuku@pat.geophys.tohoku.ac.jp)  
Alan Burns (University of Michigan, USA; aburns@umich.edu)  
Program Committee: M. Abdu, A. Brekke, R. Fujii, S. Fukao, T. Fuller-Rowell, G. Shepherd, J. Sojka, M. Taylor, R. Walterscheid, and S. Watanabe

**S17: Middle Atmosphere Including Response to Forcing From Above and Below**

Organizers: Marvin A. Geller (SUNY Stony Brook Marine Science Research Centre, USA; mgeller@notes.cc.sunysb.edu)  
Toshitaka Tsuda (Kyoto University, Japan; tsuda@kurasc.kyoto-u.ac.jp)

**S18: Solar Variability Effects Upon the Lower Atmosphere and Climate**

Organizers: Lon L. Hood (University of Arizona, USA; lon@pl.arizona.edu)

John Austin (Meteorological Office, UK; jaustin@meto.gov.uk)

Program Committee: J. Haigh, K. Labitzke, J. Pap, D. Shindell, and M. Takahashi

### **S19: Active Experiments and Spacecraft-Environment Interactions**

Organizers: H. Gordon James (Communications Research Center, Canada; james@canrc.dgrc.crc.ca)

Hideyuki Usui (Kyoto University, Japan; usui@kurasc.kyoto-u.ac.jp)

Program Committee: P. Bernhardt, U. Inan, T. Ono, B. Reinisch, and Y. Ruzhin

### **W1: Space Weather Observation in Future**

Organizer: Maki Akioka (CRL, Japan; akioka@crl.go.jp)

### **W2: Satellite Anomalies**

Organizer: Joe H. Allen (NOAA, USA; jallen@ngdc.noaa.gov)

### **W3: April-May 1998/September 1999 Events**

Organizers: Janet U. Kozyra (University of Michigan, USA; jukozyra@srv5.engin.umich.edu)

Daniel N. Baker (University of Colorado, USA; baker@orion.colorado.edu)

## **What is Japan?**

**No Tipping:** Individual tipping is not practiced in Japan. At hotels, *Ryokans*, and high-class restaurants, however, a 10% service charge is added to the bill. No tip is necessary to a taxi driver unless you request extra services.

**Convenience Stores:** Wherever you are in Japan, you can find there is a convenience store less than five minutes away. That is convenient! You can buy just about anything in these brightly lit shops, and most are open round-the-clock. Even more common are the world famous vending machines, especially those offering hot and cold drinks. It does not stop there. Rice, flowers, underwear - there is a vending machine for almost everything if you look hard enough.

**Food in Japan:** Food, of all types and from every country under the Sun, is one of the great pleasures of life in Japan. To begin scratching the surface of Japan's vast selection of food, take a walk in the vicinity of any subway or train station. Another place to find reasonably priced meals is in department stores, which can devote an entire floor to various restaurants.

**Japanese Cuisine:** *Sukiyaki* is prepared at the table by cooking sliced beef along with various vegetables, tofu, and vermicelli. *Tempura* is prawns, fish, and vegetables in season, deep-fried in vegetable oil after being coated with wheat flour. *Sushi* is small pieces of raw or cooked, seafood placed on a ball of rice. *Yakitori* is a small piece of chicken meat and vegetables skewered on a bamboo stick and grilled over a fire. *Tonkatsu* is a deep-fried pork cutlet rolled in breadcrumbs. *Shabu-shabu* is tender, thin slices of beef briefly heated in a pot of boiling water, then dipped in a sauce. *Soba* and *Udon* are two kinds of Japanese noodle. *Soba* is made from buckwheat flour and *Udon* from wheat flour. They are available in hundreds of delicious variations.

**Japan, A Safe Country:** To understand how safe it really is, women can walk safely almost anywhere on their own, at any time of night. It is not unusual to see kids riding the train alone, and sleeping on trains seems like the national pastime! Nearly everyone has a story about the time they lost their wallet and it was returned to them by the police a few days later.

(Courtesy of the Japan National Tourist Organization)

# Time Schedule

## Monday, October 2; AM

S3: CMEs and Coronal Holes	9:30 - 12:40	Room 2
S6: Comparison of Observations and Simulations of Global Magnetospheric Structure	9:30 - 12:25	Room 3
S7: Tail Plasma Flows and Ionospheric Consequences	9:30 - 12:30	Room 6
S9: Energetic Particle Dynamics in the Inner Magnetosphere	9:30 - 12:30	Room 4
S14: Wave-Particle Interactions at Shocks and Boundary Layers	9:30 - 12:40	Room 5
S16: Ionosphere-Thermosphere-Mesopause Coupling	9:30 - 12:25	Room 1

## Monday, October 2; PM

S3: CMEs and Coronal Holes	14:00 - 17:10	Room 2
S6: Comparison of Observations and Simulations of Global Magnetospheric Structure	14:00 - 16:55	Room 3
S7: Tail Plasma Flows and Ionospheric Consequences	14:00 - 17:00	Room 6
S9: Energetic Particle Dynamics in the Inner Magnetosphere	14:00 - 17:10	Room 4
S14: Wave-Particle Interactions at Shocks and Boundary Layers	14:00 - 17:15	Room 5
S16: Ionosphere-Thermosphere-Mesopause Coupling	14:00 - 16:55	Room 1
<i>Welcoming Party</i>	18:00 - 20:00	Royton Hall

## Tuesday, October 3; AM

Tutorial Lecture: "Solar-Terrestrial Physics — Past Achievements and Future Opportunities" by Daniel N. Baker	8:30 - 9:30	Royton Hall
S1: Space Weather: Prediction Techniques	9:30 - 12:30	Room 3
S4: Interplanetary Disturbances	9:30 - 12:20	Room 2
S5: Solar Wind Effects on Ionospheric Convection	9:30 - 12:25	Room 6
S10: Magnetic Reconnection: Theory and Simulations	9:30 - 12:30	Room 5
S13: Aurora Dynamics and Plasma Wave Emissions	9:30 - 12:30	Room 4
S16: Ionosphere-Thermosphere-Mesopause Coupling	9:30 - 12:25	Royton Hall
S17: Middle Atmosphere Including Response to Forcing From Above and Below	9:30 - 12:27	Room 1

## Tuesday, October 3; PM

S1: Space Weather: Prediction Techniques	14:00 - 17:00	Room 3
S4: Interplanetary Disturbances	14:00 - 17:30	Room 2
S5: Solar Wind Effects on Ionospheric Convection	14:00 - 16:55	Room 6
S10: Magnetic Reconnection: Theory and Simulations	14:00 - 17:00	Room 5
S13: Aurora Dynamics and Plasma Wave Emissions	14:00 - 17:00	Room 4
S16: Ionosphere-Thermosphere-Mesopause Coupling	14:00 - 16:55	Royton Hall
S17: Middle Atmosphere Including Response to Forcing From Above and Below	14:00 - 17:01	Room 1
W1: Space Weather Observation in Future	17:00 - 19:30	Room 1
W2: Satellite Anomalies	17:00 - 19:00	Room 3
W3: April-May 1998 / September 1999 Events	17:20 - 21:00	Room 6
<i>PURAES Meeting</i>	17:00 - 19:00	Room 4
<i>LRPC Open Meeting</i>	19:30 - 21:30	Room 5

## Wednesday, October 4; AM

### Poster Session

8:30 - 12:00

Sapporo  
Media Park

- S1: Space Weather: Prediction Techniques
- S3: CMEs and Coronal Holes
- S4: Interplanetary Disturbances
- S6: Comparison of Observations and Simulations of Global Magnetospheric Structure
- S7: Tail Plasma Flows and Ionospheric Consequences
- S9: Energetic Particle Dynamics in the Inner Magnetosphere
- S13: Aurora Dynamics and Plasma Wave Emissions
- S14: Wave-Particle Interactions at Shocks and Boundary Layers

## Wednesday, October 4; PM

*Excursion*

13:30 - 18:00

*Conference Dinner*

18:00 - 20:00

## SCOSTEP's Former Programs

A precursor ICSU body to SCOSTEP (CSAGI) organized the International Geophysical Year (IGY) for 1957/58, and created the World Data Center (WDC) system to preserve the data and products arising from IGY. This was the first globally coordinated observing program of modern times and documented the first large-scale picture of Sun-Earth Connections.

The International Quiet Sun Year (IQSY) 1964-65 followed after IGY and contained many of the STP observing networks, data processing plans, and archiving and dissemination systems developed for IGY. It led directly to the creation of IUCSTP, the linear forerunner of SCOSTEP.

The STP part of CSAGI evolved into the Inter-Union Commission on Solar-Terrestrial Physics  
(Continued to the next page)

## Thursday, October 5; AM

Tutorial Lecture: "Global Circulation of the Middle Atmosphere" by Isamu Hirota	8:30 - 9:30	Royton Hall
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Poster Session	9:30 - 12:30	Sapporo Media Park
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- S2: Space Weather
- S5: Solar Wind Effects on Ionospheric Convection
- S8: Storm-Time Ring Current
- S10: Magnetic Reconnection: Theory and Simulations
- S11: Cross-Scale Coupling: Observations and Theories
- S12: ULF and VLF Waves in the Magnetosphere
- S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena
- S17: Middle Atmosphere Including Response to Forcing From Above  
and Below
- S18: Solar Variability Effects Upon the Lower Atmosphere and Climate
- S19: Active Experiments and Spacecraft-Environment Interactions
- W1: Space Weather Observation in Future
- W2: Satellite Anomalies

(IUCSTP) formed by ICSU in 1966. In part this resulted from the successful STP work on IGY and IQSY. In 1972, ICSU created a Special Committee on Solar-Terrestrial Physics (SCOSTEP) from the IUCSTP activity.

This recognized that STP needs of ICSU bodies were gaining in scientific importance, and deserved such status.

IMS (International Magnetospheric Study) was SCOSTEP's main program from 1976-1979. IMS was the first globally coordinated STP program to integrate satellites, airborne, ship, and ground-based observing platforms in the effort to study the driving forces that form and affect the magnetosphere. During IMS, ICSU recognized that STP topics were likely to remain important among many other ICSU bodies (e.g., IAU, IUGG, URSI, IUPAP, and several scientific committees). This led to the designation of SCOSTEP as a "Scientific Committee." Special Committees have limited lifetimes, usually until completion of the program around which they  
(Continued to the next page)

## Thursday, October 5; PM

S2: Space Weather	14:00 - 17:00	Room 3
S5: Solar Wind Effects on Ionospheric Convection	14:00 - 16:55	Room 6
S8: Storm-Time Ring Current	14:00 - 17:00	Room 2
S11: Cross-Scale Coupling: Observations and Theories	14:00 - 17:00	Room 5
S12: ULF and VLF Waves in the Magnetosphere	14:00 - 17:00	Royton Hall
S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena	14:00 - 17:00	Room 4
S17: Middle Atmosphere Including Response to Forcing From Above and Below	14:00 - 17:01	Room 1
W1: Space Weather Observation in Future	17:00 - 19:00	Room 1
W2: Satellite Anomalies	17:00 - 19:00	Room 3
W3: April-May 1998 / September 1999 Events	17:20 - 21:00	Room 6

formed. Scientific Committees continue for indefinite lifetimes, although they undergo periodic ISCU reviews.

SMY (Solar Maximum Year) was a smaller SCOSTEP program in the post-IMS time, 1979-81. It was focused specifically on solar physics.

MAP (Middle Atmosphere Program) was a major, broad STP program coordinated by SCOSTEP from 1982-85. Besides investigating a region of the Sun-Earth connected environment previously largely ignored, the Middle Atmosphere, it had other unusual features. Preliminary Pre-MAP programs were identified and conducted to help define MAP science objectives and refine or standardize observational techniques. After MAP ended, there was a MAP Continuation period to complete some programs.

Both IMS and MAP produced a good scientific picture of the physics of Sun-Earth Connections  
(Continued to the next page)

### Friday, October 6; AM

Tutorial Lecture: "Sun-Earth Coupling and Possible Effects on Earth's Climate" by Eigil Friis-Christensen	8:30 - 9:30	Royton Hall
S2: Space Weather	9:30 - 12:30	Room 3
S8: Storm-Time Ring Current	9:30 - 12:30	Room 2
S11: Cross-Scale Coupling: Observations and Theories	9:30 - 12:30	Room 5
S12: ULF and VLF Waves in the Magnetosphere	9:30 - 12:30	Room 6
S18: Solar Variability Effects Upon the Lower Atmosphere and Climate	9:30 - 12:20	Room 1
S19: Active Experiments and Spacecraft-Environment Interactions	9:30 - 12:30	Room 4

### Friday, October 6; PM

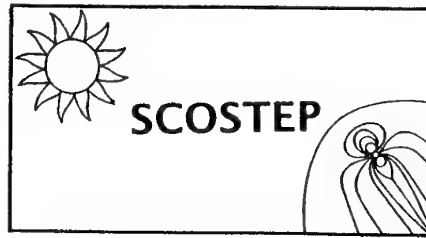
S2: Space Weather	14:00 - 17:05	Room 3
S8: Storm-Time Ring Current	14:00 - 17:10	Room 2
S12: ULF and VLF Waves in the Magnetosphere	14:00 - 17:00	Room 6
S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena	14:00 - 17:00	Room 5
S18: Solar Variability Effects Upon the Lower Atmosphere and Climate	14:00 - 17:10	Room 1
S19: Active Experiments and Spacecraft-Environment Interactions	14:00 - 17:00	Room 4

in particular regions. Some satellite resources planned for MAP were delayed in launch until after MAP ended.

STEP (Solar-Terrestrial Energy Program) was SCOSTEP's umbrella program from 1990-95 and was later extended through 1997 to take advantage of satellite arrays that were delayed in launching. The grand objective of STEP was to tie together observations and scientific understanding of the different STP regions. A STEP goal was to build and operate models based on already known and newly discovered scientific principles from each of the regions. Again, some satellite arrays were delayed in launching even beyond the extended end of STEP. However, many of the satellites launched during STEP continued in good operation after STEP ended in 1997, so that there is an unprecedented array of excellent STP satellites now in orbit.



*Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)*



*About the City of Sapporo.....*

Restaurants	6,000
Department stores	10
Supermarkets	60
Shops	6,000
Factories	2,200
Banks	30
Parks	2,400
Roadside trees	620,000
Hospitals	230
Dentists/Clinics	2,250
Nursery schools	155
Elementary schools	212
Junior high schools	105
High schools	56
Universities/Colleges	21
Technical schools	120
Gymnasiums	12
Public swimming pool	10
Public baseball fields	134
Ski resorts	11
Museums	11
Movie theaters	37
Foreigners living in Sapporo	10,000
Tourists	11,000,000/yr

**Odori Park**, Whatever the season, citizens relax at the center of the city in Odori Park. Tourist find themselves feeling right at home in the park. This park is only one block away from the site of The First S-RAMP Conference.



# Program

## Tutorials

T1: Tuesday, October 3; Royton Hall

8:30 - 9:30

*Chairperson:* Y. Omura

Solar-Terrestrial Physics – Past Achievements and Future Opportunities

Daniel N. Baker

T2: Thursday, October 5; Royton Hall

8:30 - 9:30

*Chairperson:* Robert A. Vincent

Global Circulation of the Middle Atmosphere

Isamu Hirota

T3: Friday, October 6; Royton Hall

8:30 - 9:30

*Chairperson:* Alan H. Manson

Sun-Earth Coupling and Possible Effects on Earth's Climate

Eigil Friis-Christensen

## **S1: Space Weather: Prediction Technique**

Organizers: T. Detman and H. Lundstedt

### **Tuesday, October 3; Room 3**

- 9:30 S1-01 REPORT ON THE SOLAR CYCLE 23 PREDICTION PROJECT  
J. A. JOSELYN (Solicited)
- 9:50 S1-02 MEASUREMENTS OF SPACE WEATHER FORECAST PERFORMANCE  
P. WILKINSON, R. Thompson (Solicited)
- 10:10 S1-03 THE POSSIBILITY OF SOLAR FLARE AND CME PREDICTION FROM PHOTOSPHERIC MAGNETIC FIELD MEASUREMENTS  
A. I. PODGORNY, I. M. Podgorny, S. Minami
- 10:50 *Break*
- 11:10 S1-04 USE OF SOLAR IMAGES FOR PREDICTIONS OF INTERPLANETARY DISTURBANCES  
S. WATARI, T. Watanabe (Solicited)
- 11:30 S1-05 ESTIMATION OF THE SOLAR WIND SPEED BY THE EXPANSION RATE OF THE CORONAL MAGNETIC FIELD  
K. HAKAMADA, M. Kojima, M. Tokumaru, T. Ohmi, A. Yokobe, K. Fujiki
- 11:50 S1-06 MONITORING THE PROGRESS OF TRAVELLING SHOCKS BETWEEN THE SUN AND THE EARTH USING PARTICLE AND PLASMA SIGNATURES RECORDED ABOARD SOHO, ACE, WIND AND INTERBALL  
S. MCKENNA-LAWLOR, K. Kecskemety, C. D. Fry, M. Dryer, Z. Smith, W. Sun, D. Berdichevsky, K. Kudela
- 12:10 S1-07 A REAL-TIME HYBRID HELIOSPHERIC MODELING SYSTEM  
T. R. DETMAN, Z. Smith, N. Arge, V. Pizzo, M. Dryer (Solicited)
- 12:30 *Lunch*
- 14:00 S1-08 THE USE OF ARTIFICIAL NEURAL NETWORKS AS FORECASTING DRIVERS FOR THE MAGNETOSPHERIC SPECIFICATION MODEL AND THE ENERGETIC ELECTRON MAGNETOSPHERIC SPECIFICATION MODEL (EEMSM)  
J. W. FREEMAN, B. Hausman, K. Costello (Solicited)
- 14:20 S1-09 DIURNAL AND SEASONAL EFFECTS OBSERVED IN THE Dst INDEX  
R. L. MCPHERRON (Solicited)
- 14:40 S1-10 NONLINEAR DYNAMICS: A NEW APPROACH IN HIGH-LATITUDE IONOSPHERIC ELECTRODYNAMICS MODELING  
D. VASSILIADIS, A. J. Klimas, R. J. Parks, J. A. Valdivia
- 15:00 S1-11 SPECIFICATION AND FORECAST OF ENERGETIC MAGNETOSPHERIC ELECTRONS AND IONS  
D. F. Moorer, D. N. BAKER
- 15:20 *Break*
- 15:40 S1-12 FORECASTING SOLAR ACTIVITY WITH AI  
H. LUNDSTEDT (Solicited)
- 16:00 S1-13 PREDICTING MAGNETOSPHERIC ACTIVITY WITH A LOW-DIMENSIONAL DYNAMICAL MODEL  
I. DOXAS, W. Horton, R. Weigel (Solicited)
- 16:20 S1-14 REAL-TIME PREDICTION OF LARGE GEOMAGNETIC STORMS  
J. CHEN, N. Arge, S. Slinker
- 16:40 S1-15 THE SAPPORO 2000 OLYMPIC SPACE WEATHER PREDICTION CHALLENGE  
T. R. DETMAN, H. LUNDSTEDT (Solicited)

## Poster Session

Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S1-P01 OPERATIONAL MODELS USING A NEURAL NETWORK FOR PREDICTING Dst INDEX  
S. WATANABE, E. Sagawa, K. Ohtaka, H. Shimazu
- S1-P02 SIMULTANEOUS ANALYSIS OF SOLAR TERRESTRIAL MEASUREMENTS  
HARI OM VATS, H. S. Sawant, F. C. R. Fernandes, R. R. Rosa, J. R. Cecatto, J. A. C. F. Neri
- S1-P03 MULTI-FACTOR ANALYSIS OF RELATION OF GEOMAGNETIC ACTIVITY TO SOLAR WIND PARAMETERS  
Y. P. MALTSEV, I. V. Golovchanskaya
- S1-P04 STUDY OF SOLAR WIND - MAGNETOSPHERE COUPLING USING THE FILTERING TECHNIQUE  
V. V. SHELOMENTSEV
- S1-P05 PRINCIPLES AND TECHNIQUES FOR SHORT-TERM PREDICTING VARIATIONS IN THE CRITICAL FREQUENCIES OF THE IONOSPHERIC F2 REGION IN MIDDLE LATITUDES EMPLOYING THE SOLAR AND GEOMAGNETIC INDICES  
O. F. TYRNOV, I. G. Zakharov, V. Karasin
- S1-P06 REAL-TIME PREDICTION OF IONOSPHERIC DISTURBANCES CAUSED BY STORMS AND SUBSTORMS  
D. V. BLAGOVESHCHENSKY, A. S. Rodger
- S1-P07 NONLINEAR PREDICTION OF SPACE WEATHER USING RADIAL BASIS FUNCTIONS  
C. DYER, P. Cannon, N. Francis, D. Rodgers, S. Clucas, R. Smith
- S1-P08 AN IMPROVEMENT IN STORM FIELD PREDICTION  
T. IYEMORI
- S1-P09 THE GEOSPACE ENVIRONMENT DATA ANALYSIS SYSTEM (GEDAS)  
Y. KAMIDE, S. Masuda, H. Shirai, H.-J. KIM, T. Ogino, N. Nishitani, H. Shinagawa, M. Kojima
- S1-P10 SHORT-TIME NEURAL NETWORK PREDICTIONS OF COSMIC RAY NEUTRON MONITOR RESPONSES TO SOLAR ACTIVITY MODULATION FROM SOLAR WIND DATA  
V. DOVHEDEN, H. Lundstedt
- S1-P11 NEURAL NETWORK PREDICTION OF GEOSYNCHRONOUS RELATIVISTIC ELECTRON FLUX FROM SOLAR WIND DATA  
P. WINTOFT, H. Lundstedt
- S1-P12 ARTIFICIAL NEURAL NETWORK APPLICATIONS FOR NOWCASTING AND FORECASTING OF THE SPACE WEATHER  
A. V. DMITRIEV
- S1-P13 IMPROVED Kp AND Dst FORECAST USING ANFIS TECHNIQUES  
E. KIHN, M. Zhizhin
- S1-P14 THE USE OF ONE-MINUTE DATA OF EMILIO SEGRE OBSERVATORY (ISRAEL) OF TOTAL AND DIFFERENT NEUTRON MULTIPLICITIES COUNTING RATES FOR AUTOMATICALLY SEARCHING THE START OF DANGEROUS FLARE ENERGETIC PARTICLE EVENTS  
L. I. DORMAN, N. Iucci M. Murat, Y. Noter, L. A. Pustil'nik, G. Villaresi, I. G. Zukerman
- S1-P15 PREDICTING HIGH-LATITUDE GEOMAGNETIC DISTURBANCE PATTERNS USING NEURAL NETWORKS  
H. Gleisner, H. Lundstedt
- S1-P16 FORECASTING GEOMAGNETIC STORMS USING ENERGETIC ION ENHANCEMENTS: CONTINUED  
Z. SMITH, W. Murtagh
- S1-P17 REAL-TIME UPDATING OF THE MID-LATITUDE IONOSPHERIC TROUGH MODEL  
I. STANISLAWSKA, H. Rothkaehl, Z. Zbyszynski, G. Juchnikowski
- S1-P18 RESULTS FROM GLOBAL MHD SIMULATIONS FOR SPACE WEATHER MONTH  
M. WILTBERGER, J. G. Lyon, C. C. Goodrich, S. Shepard, K. Baker, M. K. Hudson, S. K. Elkington
- S1-P19 FORECASTING EVOLUTION OF Dst INDEX FROM SOLAR WIND MEASUREMENT USING SUPPORT VECTOR METHODS  
P. M. Drezet, R. F. Harrison, M. BALIKHIN

S1

- S1-P20 FORECASTING EVOLUTION OF Dst INDEX FROM SOLAR WIND MEASUREMENT USING  
NONLINEAR ADAPTIVE FILTERS  
P. M. Drezet, R. F. Harrison, M. BALIKHIN
- S1-P21 FINAL VALIDATION RESULTS AND DATABASES FOR TWO SOLAR EVENT-INITIATED  
INTERPLANETARY SHOCK PROPAGATION MODELS  
S. QUIGLEY, K. Kadinsky-Cade (Solicited)
- S1-P22 SOLAR PROTON FLUX FORECAST  
E. DEL POZO GARCIA, J. F. Valiente Marques
- S1-P23 A 3-BASE METHOD OF GEOMAGNETIC DISTURBANCE PREDICTION  
WEI FENGSI, Cai Hongchang, Feng Xueshang, Xu Ya (Solicited)
- S1-P24 PREDICTION OF THE SUNSPOT MAXIMUM FOR SOLAR CYCLE 23  
R. P. KANE
- S1-P25 PERIODICITIES IN THE TIME SERIES OF SOLAR EMISSIONS AT DIFFERENT SOLAR ALTITUDES  
R. P. KANE
- S1-P26 DATA ASSIMILATION TECHNIQUES IN THE LOW LATITUDE IONOSPHERE: ESTIMATION OF  
VERTICAL EXB DRIFTS FROM OBSERVED IONOSPHERIC PARAMETERS  
D. ANDERSON, A. Anghel, S. Heironymus
- S1-P27 RADIOHELIOGRAPHIC DIAGNOSTICS OF SOLAR FACTORS THAT DETERMINE AND DISTURB  
THE SPACE WEATHER  
G. SMOLKOV, V. Maksimov, A. Uralov, V. Zandanov, N. Kardapolova
- S1-P28 POSSIBLE TRIGGER FOR SOLAR FLARES  
S. IBADOV, F. S. Ibodov, S. S. Grigorian
- S1-P29 A STATISTICAL MODEL OF THE ANNUAL MAGNETIC STORM OCCURRENCE  
M. P. FREEMAN, M. Daws, R. B. Horne
- S1-P30 TREND, NON-STATIONARY CYCLES DERIVED IN SELF-CONSISTENT STUDY OF SUNSPOT  
NUMBERS AND PROBLEMS OF FORECASTING  
L. B. Tsurulnik, T. V. KUZNETSOVA, V. N. Oraevsky
- S1-P31 COMPARISON OF METHODS FOR SOLAR CYCLE PREDICTION  
P. LANTOS
- S1-P32 ARTIFICIAL NEURAL NETWORK TECHNIQUE FOR PREDICTION OF SOLAR ACTIVITY INDEXES  
FOR DIFFERENT TERMS  
N. BARKHATOV, S. Ponomarev, S. Sakharov
- S1-P33 FORECASTING DANGEROUS SITUATIONS FOR SPACECRAFTS AND AIRCRAFTS CAUSED BY  
LARGE SOLAR ENERGETIC PARTICLE EVENTS  
L. I. DORMAN
- S1-P34 IMPROVING SOLAR PROTON EVENTS STATISTICAL MODELS  
A. HILGERS
- S1-P35 PREINCREASE EFFECT BEFORE FORBUSH-DECREASE AS A PHENOMENON IMPORTANT IN  
SPACE WEATHER FORECASTING  
Z. KOBYLINSKI

## S2: Space Weather

Organizers: H. Koskinen and N. Fox

### Thursday, October 5; Room 3

- 14:00 S2-01 GEOEFFECTIVENESS OF CMES  
R. Schwenn (Solicited)
- 14:25 S2-02 3D MHD MODELING OF THE SOLAR DRIVERS OF SPACE WEATHER  
S. POEDTS, A. Csik, H. De Sterck, H. Deconinck, D. Roose
- 14:40 S2-03 AN EMPIRICAL MODEL TO PREDICT THE ARRIVAL OF CORONAL MASS EJECTIONS AT 1 AU  
N. Gopalswamy, A. Lara, M. L. Kaiser
- 14:55 S2-04 PREDICTING BOW SHOCK AND MAGNETOPAUSE LOCATIONS DERIVED FROM EMPIRICAL  
MODELS AND REAL-TIME SOLAR WIND DATA  
S. M. PETRINEC
- 15:10 S2-05 ON SPACE WEATHER ENERGY BUDGET  
H. E. J. KOSKINEN, E. I. Kallio, E. J. Kallio, T. I. Pulkkinen
- 15:25 Break
- 15:40 S2-06 MHD SIMULATIONS OF SUBSTORMS FOR SPACE WEATHER  
T. TANAKA (Solicited)
- 16:05 S2-07 CAN WE TRACE THE SPACE-WEATHER CONDITIONS BY THE GROUND-BASED GEOPHYSICAL  
OBSERVATIONS?  
O. A. TROSHICHEV, A. V. Shirochikov, L. N. Makarova
- 16:20 S2-08 REALTIME MONITOR FOR AURORAL KILOMETRIC RADIATION: RELATIONSHIP WITH  
SUBSTORMS, PROPAGATIONS IN THE VICINITY OF THE EARTH, AND REALTIME MONITOR  
SYSTEM  
T. MURATA, K. Tsutsumi, W. Kurth, K. Hasimoto, H. Matsumoto
- 16:35 S2-09 SCOSTEP S-RAMP SEPTEMBER 1999 SPACE WEATHER MONTH CAMPAIGN: OVERVIEW OF  
EVENTS, WORKSHOP INTERFACE, DATA SETS AND STUDIES UNDERWAY  
J. U. KOZYRA (Solicited)

S2

### Friday, October 6; Room 3

- 9:30 S2-10 SPACE WEATHER EVENTS DURING THE S-RAMP SPECIAL ANALYSIS INTERVAL:  
APRIL-MAY 1998  
D. N. Baker
- 9:45 S2-11 ENERGETIC ELECTRON BEHAVIOR IN THE OUTER RADIATION ZONE DURING THE SPACE  
WEATHER MONTH  
T. Obara, T. Nagatsuma
- 10:00 S2-12 EFFECTS OF IONOSPHERIC SCINTILLATION: ITS SPECIFICATION AND FORECASTING  
S. BASU, K. M. Groves (Solicited)
- 10:25 S2-13 MAGNETIC STORM INDUCED SCINTILLATIONS AT MID-LATITUDES DURING THE SPACE  
WEATHER MONTHS OF SEPT/OCT 1999  
SUNANDA BASU, S. Basu, J. Foster, A. Ridley
- 10:40 S2-14 RELATIONSHIP OF THE APR. 29, 1998 HALO CME AND THE MAGNETIC CLOUD AND  
GEOACTIVITY ON MAY 2-3  
D. Webb, R. Lepping, S. Plunkett, S.-T. Wu
- 10:55 Break
- 11:10 S2-15 RAPID PROTOTYPING: APPLYING RESEARCH MODELS AND DATA TO OPERATIONAL SPACE  
WEATHER FORECASTING  
T. G. ONSAGER (Solicited)
- 11:35 S2-16 TRANSITION OF RESEARCH RESULT TO OPERATIONAL ENVIRONMENT  
C.-I. Meng (Solicited)

- 12:00 S2-17 THE COMMUNITY COORDINATED MODELING CENTER  
K. Baker, P. Bellaire, M. Bonadonna, J. Bredekamp, M. Heinemann, M. Hesse, T. Onsager,  
B. Robinson, J. Sharber, K. Scro
- 12:15 S2-18 THE USE OF DATA ASSIMILATION IN THE MAGNETOSPHERIC SPECIFICATION MODEL  
T. GARNER, R. A. Wolf, R. W. Spiro, M. F. Thomsen, H. Korth
- 12:30 *Lunch*
- 14:00 S2-19 SUBSTORMS AND MAGNETIC STORMS FROM THE SATELLITE CHARGING PERSPECTIVE  
J. F. FENNELL, H. C. Koons, J. L. Roeder, J. B. Blake
- 14:15 S2-20 A STATISTICAL LINK BETWEEN MAGNETIC STORMS AND SPACECRAFT ANOMALIES  
M. P. FREEMAN, M. Daws, R. B. Horne
- 14:30 S2-21 MONITORING EQUIVALENT DOSES RECEIVED BY AIR CREW  
P. LANTOS
- 14:45 S2-22 GROUND EFFECTS OF SPACE WEATHER  
R. PIRJOLA (Solicited)
- 15:10 S2-23 HIGH VOLTAGE POWER TRANSMISSION LINE DISTURBANCES DURING LARGE GEOMAGNETIC STORMS  
P. STAUNING
- 15:25 *Break*
- 15:40 S2-24 STUDY OF GEOELECTRIC FIELD AND GEOMAGNETICALLY INDUCED CURRENTS DURING RECENT SPACE WEATHER EVENTS  
L. TRICHTCHENKO, D. H. Boteler
- 15:55 S2-25 NOWCASTING SPACE WEATHER EFFECTS IN THE HIGH-LATITUDE IONOSPHERE WITH THE SUPERDARN HF RADARS  
J. M. Ruohoniemi, R. A. Greenwald, R. J. Barnes
- 16:10 S2-26 A WEB-BASED EMPIRICAL MODEL OF THE EARTH'S IONOSPHERE USING INCOHERENT SCATTER RADAR DATA  
J. Holt, R. Sitar
- 16:25 S2-27 THE REAL TIME AMIE TECHNIQUE: HOW IT WORKS AND HOW WE CAN MAKE IT BETTER  
A. RIDLEY
- 16:40 S2-28 THE SPACE WEATHER REQUIREMENTS FOR INDIA – A PERSPECTIVE  
B. M. REDDY, D. R. Lakshmi (Solicited)

## Poster Session

**Thursday, October 5; Sapporo Media Park**

9:30-12:30

- S2-P01 ON THE RELATIONSHIP BETWEEN CORONAL MASS EJECTIONS (CMES), INTENSIVE SOLAR FLARES, SOME MAGNETOSPHERIC PARAMETERS AND DIFFERENT TYPE AURORAS DURING GREAT MAGNETIC STORMS  
Y. P. MALTSEV, L. S. Yevlashin
- S2-P02 THE RELIABILITY OF PREDICTIONS OF LARGE SOLAR WIND DISTURBANCES BY AN UPSTREAM MONITOR  
P. A. DALIN, A. J. Lazarus, G. N. Zastenker, K. I. Paularena, J. D. Richardson
- S2-P03 GEOEFFICIENCY OF CORONAL MASS EJECTIONS DURING A RISING SOLAR CYCLE  
K. E. J. Huttunen, H. E. J. KOSKINEN, R. Schwenn, O. C. St. Cyr
- S2-P04 ENERGETIC ELECTRON VARIATION IN THE OUTER RADIATION ZONE DURING EARLY MAY 1998 MAGNETIC STORM  
T. Obara, Y. Miyoshi, A. Morioka
- S2-P05 ENHANCEMENTS OF ENERGETIC ELECTRON FLUX AT GEOSYNCHRONOUS ORBIT DURING THE RECOVERY PHASE OF GEOMAGNETIC STORM: IMPORTANCE OF THE SUBSTORM ACTIVITY HISTORY  
M. Fukata, S. Taguchi, T. OKUZAWA, T. Obara

- S2-P06 FORMATION OF NEW PROTON RADIATION BELT ASSOCIATED WITH SOLAR PROTON EVENTS AND INTERPLANETARY SHOCKS  
M. DEN, T. Obara, T. Onsager
- S2-P07 RADIAL DEPENDENCE OF RELATIVISTIC ELECTRON FLUXES DURING THE STORM MAIN PHASE  
H.-J. KIM, G. Rostoker, Y. Kamide
- S2-P08 MAGNETIC FIELD VARIATIONS AT GEOSYNCHRONOUS ORBIT AND ITS RELATIONS TO RELATIVISTIC ELECTRON FLUX  
T NAGATSUMA, T. Obara
- S2-P09 MULTI-SATELLITE OBSERVATIONS OF GEOSYNCHRONOUS MAGNETOPAUSE CROSSINGS  
D. Yoshida, T. Araki
- S2-P10 CHANNELS OF INFLUENCE OF THE SHORT-TERM CHANGES IN SOLAR ACTIVITY ON STATE OF THE LOWER ATMOSPHERE  
O. TROSHICHEV, A. Shirochikov, A. Frank-Kamenetsky, I. Gabis, L. Egorova, L. Makarova, V. Vovk
- S2-P11 ON NONLINEARITY FEATURES OF THE CLIMATE SYSTEM  
Z. VOROS, A. Prigancova, D. Jankovicova
- S2-P12 NEW PROSPECTS IN PATTERN RECOGNITION OF SPACE WEATHER CONDITIONS  
Z. VOROS, D. Jankovicova, P. Dolinsky, F. Valach
- S2-P13 DIURNAL VARIATION OF GEOMAGNETIC ACTIVITY AND ITS ROLE IN SPACE WEATHER FORECAST  
W. LYATSKY, A. M. Hamza
- S2-P14 NEAR-REAL TIME KP ESTIMATES  
K. Takahashi, B. A. Toth, J. V. Olson, B. J. Anderson
- S2-P15 SPACE ENVIRONMENT SIMULATOR FOR THE RESEARCH OF THE SPACECRAFT-PLASMA INTERACTIONS  
H. USUI, H. Matsumoto, Y. Omura
- S2-P16 THE STUDY OF IONOSPHERIC RESPONSE TO SOLAR FLARE OCCURRED ON NOV. 22, 1998 WITH GPS METHOD  
Zhang Donghe, Xiao Zuo, Chang Qing
- S2-P17 RECENT OBSERVATIONS AND MODELING OF THE FORMATION OF POLAR CAP PATCHES  
C. E. VALLADARES, T. Pedersen
- S2-P18 AURORAL ZONE GPS TEC MEASUREMENTS AND IONOSPHERIC BACKSCATTER FROM SUPERDARN  
P. PRIKRYL, H. G. James, S. Skone, D. Andre
- S2-P19 SPACE WEATHER PRODUCTS FROM SUPERDARN  
R. A. GREENWALD, R. Barnes, J. M. Ruohoniemi, S. Shepherd
- S2-P20 STATISTICAL INVESTIGATION OF THE SATURATION EFFECT IN THE IONOSPHERIC FOF2 VERSUS SUNSPOTS, SOLAR RADIO NOISE, AND SOLAR EUV  
J. Y. Liu, Y. I. Chen
- S2-P21 CONTINUOUS MONITORING AND FORECASTING OF SPACE WEATHER BY USING ON-LINE COSMIC RAY DATA FROM THE WORLD NETWORK OF STATIONS  
L. I. DORMAN, N. Iucci, G. Villaresi
- S2-P22 SPACE WEATHER IMPACTS ON THE EARTH: INCREASING OF THE FREQUENCY OF MYOCARDIAL INFARCTIONS, BRAIN STROKES AND TRAFFIC ACCIDENTS IN MOSCOW AND IN ST. PETERSBURG IN PERIODS OF SPACE MAGNETIC STORMS ASSOCIATED WITH COSMIC RAY FORBUSH-DECREASES  
L. I. DORMAN, N. Iucci, N. G. Ptitsyna, G. Villaresi
- S2-P23 LIGHTNING — AN INDEX OF SPACE WEATHER DIAGNOSTICS  
R. N. SINGH



### S3: CMEs and Coronal Holes

Organizers: E. Cliver and T. Watanabe

#### Monday, October 2; Room 2

Chairperson: E. Cliver

- 9:30 S3-01 A REVIEW OF CORONAL MASS EJECTION OBSERVATIONS FROM WHITE LIGHT  
CORONAGRAPH INSTRUMENTS  
J. T. BURKEPILE, A. J. Hundhausen, O. C. St. Cyr (Solicited)
- 9:50 S3-02 SIGMOIDAL MORPHOLOGY AS A CME PREDICTOR  
D. E. MCKENZIE, R. Canfield, A. Pevtsov, H. Hudson (Solicited)
- 10:10 S3-03 OBSERVATIONS OF THE SOURCE REGIONS OF CORONAL MASS EJECTIONS  
S. P. PLUNKETT, O. C. St. Cyr, R. A. Howard (Solicited)
- 10:30 S3-04 ERUPTIVE FLARES AND CMES  
N. NITTA (Solicited)
- 10:50 Break
- 11:10 S3-05 LASCO AND EIT OBSERVATIONS OF CORONAL MASS EJECTIONS  
K. P. DERE, P. Subramanian (Solicited)
- 11:25 S3-06 EVOLUTION OF CME-PRODUCTIVE ACTIVE REGIONS AND SWITCHBACKS  
L. VAN DRIEL-GESZTELYI (Solicited)
- 11:45 S3-07 EMERGING FLUX TRIGGER MECHANISM FOR CORONAL MASS EJECTIONS  
P. F. Chen, K. SHIBATA
- 12:00 S3-08 SOLAR ERUPTIONS SEEN IN SOFT X-RAYS  
H. S. HUDSON (Solicited)
- 12:20 S3-09 LONG WAVELENGTH RADIO BURSTS ASSOCIATED WITH CMES NEAR THE SUN  
N. GOPALSWAMY (Solicited)
- 12:40 Lunch

Chairperson: T. Watanabe

- 14:00 S3-10 PROMINENCE AND CORONAL MAGNETIC FIELD SYSTEMS BEFORE AND DURING CORONAL  
MASS EJECTIONS  
S. F. MARTIN (Solicited)
- 14:20 S3-11 THE RELATIONSHIP BETWEEN CMES AND PROMINENCE ERUPTIONS FROM SOHO AND  
TENERIFE OBSERVATIONS  
B. SCHMIEDER, G. Aulanier, C. Delannée, L. van Driel-Gesztelyi, S. T. Wu, G. Simnett, J. E. Wiik
- 14:35 S3-12 A NEW THEORY OF CORONAL MASS EJECTIONS AND MAGNETIC CLOUDS  
J. CHEN (Solicited)
- 14:55 S3-13 IMPLICATIONS OF LARGE-SCALE SOLAR MAGNETIC FIELD EVOLUTION  
J. T. Hoeksema, X. P. ZHAO (Solicited)
- 15:20 Break
- 15:40 S3-14 A MODERATE SOLAR CYCLE 23?  
H. S. AHLUWALIA (Solicited)
- 16:00 S3-15 A "CORONAL HOLE-ACTIVE REGION-CURRENT SHEET (CHARCS)" MODEL FOR  
GEOEFFECTIVE CMES  
W. D. GONZALEZ, N. Srivastava, A. Dal Lago (Solicited)
- 16:20 S3-16 PHYSICAL CHARACTERISTICS OF FLUX ROPE CME'S - THEORY AND OBSERVATION  
J. Krall, J. CHEN, R. T. Duffin, R. A. Howard, B. J. Thompson
- 16:35 S3-17 NUMERICAL SIMULATION OF CORONAL MASS EJECTIONS (CMES) INITIATION AND THEIR  
ASSOCIATION TO FLARES  
S. T. WU, A. H. Wang (Solicited)
- 16:55 S3-18 THE SUN AS A MAGNETIC VARIABLE STAR GOVERNED BY THE TRIPLE-DIPOLE MODEL  
T. SAITO, K. Shibata

## Poster Session

Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S3-P01 LONG TERM TEMPORAL VARIATIONS IN THE SOLAR WIND AND THE PLANETARY INDEX  $A_p$   
H. S. AHLUWALIA
- S3-P02 SOLAR ACTIVITIES ASSOCIATED WITH STRONG SOUTHWARDS IMF NEAR MAXIMUM OF SOLAR CYCLE 23  
S. Watari, T. Watanabe
- S3-P03 EVOLUTION OF THE CORONAL MAGNETIC FIELD STRUCTURE BETWEEN TWO ERUPTIVE FLARES  
S. MASUDA
- S3-P04 FORMATION AND EVOLUTION OF A LARGE SCALE SIGMOIDAL FLUX ROPE  
A. GLOVER, L. K. Harra, K. Hori, J. L. Culhane
- S3-P05 A HALO CME ON 2 MAY 1998  
T. J. Wang, J. L. Wang, Y. H. Yan
- S3-P06 CMES AND ERUPTIVE PROMINENCES OBSERVED IN THE GERMAN-ARGENTINIAN SOLAR OBSERVATORY  
M. ROVIRA
- S3-P07 ON PATHS OF ERUPTIVE FEATURES VISIBLE IN MICROWAVES  
K. HORI, K. Shibasaki
- S3-P08 OBSERVATIONS OF PROMINENCE CAVITY AT LONG-DECIMETER AND METER WAVELENGTHS  
C. Marque, P. LANTOS, J.-M. Delouis
- S3-P09 AN OBSERVATIONAL STUDY OF RELATIONS BETWEEN DBS OF SOLAR FILAMENTS AND CMES/GEOMAGNETIC STORMS  
T. MORIMOTO, H. Kurokawa
- S3-P10 OBSERVATIONAL TENDENCIES ON CORONAL HOLES AND CME SOURCES WITH 22-YEAR PERIOD  
T. SAITO, Ta. Watanabe, K. P. Dere
- S3-P11 SOLAR WIND STRUCTURE WHEN THE POLAR CORONAL HOLE DISAPPEARS  
T. OHMI, M. Kojima, A. Yokobe, K. Hakamada, K. Fujiki, M. Tokumaru
- S3-P12 ORIGIN OF INTERPLANETARY DISTURBANCES DETECTED BY SCINTILLATION MAPPING MEASUREMENTS  
M. TOKUMARU, M. Kojima, K. Fujiki, M. Yamashita
- S3-P13 THE BEST USE OF HELIOSPHERIC PHOTOMETRIC IMAGES — TIME-DEPENDENT TOMOGRAPHY OF HELIOSPHERIC FEATURES USING GLOBAL THOMSON-SCATTERING DATA  
B. V. Jackson, P. P. Hick, A. Buffington
- S3-P14 NONSTATIONARY SOLAR RADIOEMISSION: RELATION TO CME FORMATION  
M. S. Durasova, V. M. Fridman, O. A. SHEINER
- S3-P15 THE BIRTH OF CORONAL HOLES AND CMES, AND GEOMAGNETIC STORMS  
V. G. FAINSHTEIN, G. V. Rudenko, S. V. Grablevsky
- S3-P16 PHYSICAL CONDITIONS IN POLAR CORONAL HOLE PLASMAS  
B. N. DWIVEDI, A. Mohan, K. Wilhelm
- S3-P17 COMPARISON OF 20.02.94 AND 14.04.94 SPE: MULTISATELLITE OBSERVATIONS  
S. N. Kuznetsov, I. N. Myagkova, A. N. Podorolsky, N. Hasebe, M. N. Kobayashi
- S3-P18 CONTRASTING FEATURES OF SOLAR ELECTROMAGNETIC WAVE AND ENERGETIC CHARGED PARTICLE EMISSIONS  
R. DWIVEDI, R. N. Singh
- S3-P19 CME AND "BLOB": SIMILARITY AND DIFFERENCE  
V. ESELEVICH, M. Eselevich
- S3-P20 THE FINE RAY STRUCTURE OF THE CORONAL STREAMER BELT FROM LASCO/SOHO DATA  
V. ESELEVICH, M. Eselevich
- S3-P21 A NEW METHOD OF ANALYZING THE DATA FROM THE LASCO/SOHO INSTRUMENT  
V. ESELEVICH, M. Eselevich

S3

- S3-P22 THREE TYPES OF THE PLASMA FLOW IN THE SOLAR WIND STRUCTURE  
N. A. LOTOVA, V. N. Obridko, K. V. Vladimirkii
- S3-P23 LONG-PERIOD VARIATIONS OF THE SOLAR WIND STREAM STRUCTURE AT THE SUBSONIC FLOW REGION  
N. A. LOTOVA, V. N. Obridko, K. V. Vladimirkii
- S3-P24 CORONAL MASS EJECTIONS AND SPACE WEATHER DISTURBANCES BY THE DATA OF ALMA-ATA HIGH-ALTITUDE NEUTRON MONITOR  
O. N. KRYAKUNOVA
- S3-P25 MHD SIMULATION OF ASSOCIATION BETWEEN SOLAR FLARES AND CME  
A. I. PODGORNYY, I. M. Podgorny
- S3-P26 ESCAPE OF TOROIDAL MAGNETIC BODIES FROM THE SOLAR CORONA AND THEIR PROPAGATION THROUGH INTERPLANETARY SPACE  
E. P. ROMASHETS, M. Vandas
- S3-P27 MHD FLOW IN FLAR-LIKE MAGNETIC FIELD  
Wei Fengsi, Feng Xueshang, Pan Xingguo
- S3-P28 NUMERICAL SIMULATION OF ASYMMETRIC CORONA WITH MULTI-STREAMER STRUCTURE  
LI JINGQUN, Wei Fengsi, Feng Xueshang
- S3-P29 RELEVANCE OF CMES TO THE GLOBAL SOLAR MAGNETIC FIELD  
ZHANG QIN
- S3-P30 THE SOLAR ORIGINS OF LARGE GEOMAGNETIC STORMS  
J. I. KHAN

### Japanese Lesson 1

#### Numbers

1	ichi	70	nanaju
2	ni	80	hachiju
3	san	90	kyuju
4	yon or shi	100	hyaku
5	go	200	nihyaku
6	roku	300	sanbyaku
7	nana or shichi	400	yonhyaku
8	hachi	500	gohyaku
9	kyu	600	roppyaku
10	ju	700	nanahyaku
20	niju	800	happyaku
30	sanju	900	kyuhyaku
40	yonju	1000	sen
50	goju	2000	nisen
60	rokuju	10000	ichiman

## S4: Interplanetary Disturbances

Organizers: B. Tsurutani and R. Schwenn

### Tuesday, October 3; Room 2

- 9:30 INTRODUCTION / TEST ON GEOEFFECTIVENESS ON SOLAR AND INTERPLANETARY PHENOMENA  
B. TSURUTANI
- 9:40 S4-01 PROPERTIES OF INTERPLANETARY MAGNETIC CLOUDS FOR THE ACTIVE VS. QUIET PARTS OF THE SOLAR CYCLE  
R. P. LEPPING, D. Berdichevsky (Solicited)
- 10:05 S4-02 SOLAR WIND EVENTS AND THEIR CORRELATION WITH GEOMAGNETIC ACTIVITY  
A. LAZARUS (Solicited)
- 10:30 S4-03 INTERPLANETARY CAUSES OF VERY INTENSE MAGNETIC STORMS  
W. D. GONZALEZ, A. L. Clua de Gonzalez, L. E. Vieira (Solicited)
- 10:55 Break
- 11:10 S4-04 INTERPLANETARY CAUSES OF MAGNETIC STORMS — A STATISTICAL STUDY  
S. VENNERSTROEM
- 11:25 S4-05 INTERPLANETARY MAGNETIC CLOUDS DURING 1997-1998 AND THEIR CORRELATION WITH GEOMAGNETIC ACTIVITY  
D. J. WU, J. K. Chao
- 11:40 S4-06 RISE TIME OF GEOMAGNETIC SUDDEN COMMENCEMENT  
T. ARAKI, T. Takeuchi
- 11:55 S4-07 NONLINEAR ALFVEN WAVES AND RELATED VORTEX TUBES IN INTERBALL-1 MEASUREMENTS  
O. P. VERKHOGLYADOVA, A. Agapitov, K. Kudela, M. Slivka, S. A. Romanov (Solicited)
- 12:20 Lunch
- 14:00 S4-08 COMMENTS ON A STRANGE METAMORPHOSIS BETWEEN SUN AND EARTH; OR: HOW TO TURN A CME INTO A MENACE  
R. SCHWENN (Solicited)
- 14:25 S4-09 MAGNETICALLY DOMINATED SOLAR WIND IN THE INNER HELIOSPHERE  
J. De Keyser, H. DE STERCK, M. Roth, S. Poedts
- 14:40 S4-10 WHAT WE CAN LEARN ABOUT INTERPLANETARY MAGNETIC FLUX ROPES FROM A TORUS-SHAPED MODEL  
K. MARUBASHI, H. Shimazu, S. Watari (Solicited)
- 15:05 S4-11 PITCH ANGLE DIFFUSION OF CHARGED PARTICLES BY FINITE AMPLITUDE MHD WAVES  
T. Hada, B. T. Tsurutani, L. D. Zhang
- 15:20 Break
- 15:40 S4-12 STREAMING LIMITS, SPECTRAL KNEES, AND THE HAZARD OF SEPS IN SPACE  
D. REAMES (Solicited)
- 16:05 S4-13 ROGUE EVENTS: OBSERVATIONS, MODELING, AND CONSEQUENCES FOR SHOCK ACCELERATION  
M.-B. KALLENRODE, E. W. Cliver
- 16:30 Poster oral presentations (voluntary; each person who wishes to advertise his or her talk has 1 to 2 min to present a summary. No viewgraphs allowed, no questions.)

S4

### Poster Session

### Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S4-P01 DYNAMICAL EVOLUTION OF CMES IN INTERPLANETARY SPACE  
T. WATANABE, H. Adachi, M. Kojima, M. Tokumaru

- S4-P02 QUASI-STATIONARY SOLAR WIND IN RAY STRUCTURES OF THE STREAMER BELT  
V. ESELEVICH, M. Eselevich
- S4-P03 EVOLUTION AND PROPAGATION OF A TOROIDAL MAGNETIC CLOUD IN THE SOLAR WIND:  
MHD SIMULATIONS  
M. VANDAS, D. Odstrcil
- S4-P04 DRAPERY OF IMF AROUND MAGNETIC CLOUDS OF DIFFERENT GEOMETRIES  
M. VANDAS, E. P. Romashets
- S4-P05 NUMERICAL STUDY FOR TEMPORAL BEHAVIOR OF COMPONENT BZ OF IMF DURING  
JANUARY 10-11, 1997 EVENT  
YONG SHI, Fengsi Wei, Xueshang Feng
- S4-P06 THE SIMULATION OF CORONAL MASS EJECTION-SHOCK SYSTEM IN THE INNER CORONA  
B. C. ZHANG, J. F. Wang
- S4-P07 REAL-TIME HELIOSPHERIC FORECASTING — THREE-DIMENSIONAL RECONSTRUCTION OF  
HELIOSPHERIC FEATURES USING REMOTE-SENSING DATA  
B. V. Jackson, P. P. Hick
- S4-P08 DISTURBANCE OF A SECTOR BOUNDARY BY A CORONAL MASS EJECTION LEADING TO  
FORMATION OF STRONG CURRENT DENSITIES  
E. P. ROMASHETS, M. Vandas, V. Bothmer, K. G. Ivanov
- S4-P09 THREE-DIMENSIONAL MHD CODE WITH ADAPTIVE MESH REFINEMENT FOR MODELING  
SOLAR WIND FLOWS AND INTERPLANETARY DISTURBANCES  
K. YAMASHITA, M. Den, T. Ogawa, R. Matsumoto
- S4-P10 SOLAR ACTIVITY LARGE-SCALE DISTURBANCES EVOLUTION CAUSED BY THEIR TRANSPORT  
FROM THE SUN TO THE EARTH  
N. Barkhatov, M. Zyryanova, O. Sheiner, A. Smorkalov
- S4-P11 GEOEFFICIENCY OF THE FLARE STREAMS IN DEPENDENCE ON THE CONFIGURATION OF  
THE MAGNETIC FIELDS ON THE SUN AND IN THE SOLAR WIND  
S. P. BOGDANOVA, M. I. Pudovkin
- S4-P12 NONSTATIONARY PERIODICITIES DETECTED IN SOLAR WIND DURING SPACE ERA  
T. V. KUZNETSOVA, L. B. Tsurlnik
- S4-P13 SMALL-SCALE PLASMA HOLE IN THE SOLAR WIND  
T. TAKEUCHI, T. Araki, R. P. Lepping
- S4-P14 THE GEOEFFECTIVENESS OF SOLAR WIND ALFVEN WAVES  
P. PRIKRYL, J. W. MacDougall, J. M. Ruohoniemi, G. J. Sofko, T. K. Yeoman
- S4-P15 THE GLOBAL CONFIGURATION OF MAGNETIC FIELD LINES WITH SUNWARD-PROPAGATING  
ALFVEN WAVES  
M. Yumura, T. Nakagawa
- S4-P16 INTERPLANETARY MAGNETIC STRUCTURES — WHAT CAN BE INFERRED FROM  
GEOMAGNETIC PROXIES?  
S. VANNERSTROEM
- S4-P17 CLUSTER ANALYSIS IN INVESTIGATION OF INTERCONNECTION OF PHYSICAL PROCESSES  
DURING MAIN PHASE OF VERY INTENSE ( $Dst < -200nT$ ) GEOMAGNETOSPHERIC STORMS  
J. KOVALEVSKY, E. Kovalevskaya
- S4-P18 CLUSTER SCALE  $Dst$ -AE-Bz CLASSIFICATION OF GEOMAGNETOSPHERIC STORMS (GMSs)  
MAIN PHASES (MPs)  
J. KOVALEVSKY, E. Kovalevskaya
- S4-P19 THREE-DIMENSIONAL MHD SIMULATION OF THE SOLAR WIND STRUCTURE OBSERVED BY  
ULYSSES  
YONG SHI, Fengsi Wei, Xueshang Feng, Zhangyin Ye
- S4-P20 MAGNETOSHEATH ELECTRONS IN ANOMALOUSLY LOW DENSITY SOLAR WIND OBSERVED BY  
GEOTAIL  
Y. KASABA, T. Terasawa, K. Tsubouchi, T. Mukai, Y. Saito, H. Matsumoto, H. Kojima, J. Steinberg,  
D. McComas, R. Skoug, H. Matsui, M. Hoshino, A. Nishida

- S4-P21 LOW-FREQUENCY MHD WAVES ASSOCIATED WITH PLASMA TEMPERATURE ANISOTROPY IN THE MAGNETOSHEATH OBSERVED BY GEOTAIL  
A. MATSUOKA, D. J. Southwood, S. Kokubun, T. Mukai
- S4-P22 IMPLICATION OF BEHAVIOUR OF ENERGETIC PARTICLES ASSOCIATED WITH INTERPLANETARY SHOCKS FOR SPACE WEATHER  
M. DEN, T. Yoshida
- S4-P23 PRECURSORS OF GEOMAGNETIC STORMS OBSERVED BY MUON DETECTORS  
K. MUNAKATA, J. W. Bieber, S. Yasue, C. Kato, K. Fujimoto, Z. Fujii, J. E. Humble, M. L. Duldig
- S4-P24 APPLICATION OF COSMIC RAY FORBUSH-EFFECTS RESEARCH IN INVESTIGATIONS INTERPLANETARY MOVING DISTURBANCES AND IN FORECASTING OF SPACE DANGEROUS PHENOMENA  
L. I. DORMAN, A. V. Belov, E. A. Eroshenko, N. Iucci, G. Villaresi, V. G. Yanke, I. G. Zukerman
- S4-P25 GEOPHYSICAL MANIFESTATIONS OF LARGE-SCALE SOLAR WIND DISTURBANCES AT INTERSECTION OF THEIR FLANKS BY THE EARTH  
L. P. SHADRINA, I. Ya. Plotnikov, S. A. Starodubtsev

## Japanese Lesson 2

### Places & Things

address	jusyo
airport	kuko
bank	ginko
drug store	yakkyoku
hospital	byoin
money	okane
number	bango
police	keisatsu
post office	yubinkyoku
shrine	jinja
station	eki
telephone	denwa
temple	o-tera
ticket	kippu
train	densha
yen	en

### Verbs

buy	kau
can	dekiru
come	kuru
drink	nomu
eat	taberu
go	iku
pay	harau
read	yomu
sell	uru
speak	hanasu
stay (hotel, etc.)	tomaru

understand
walk
write

wakaru
aruku
kaku

### Adjectives/Adverbs

always	itsumo
bad	warui
big	okii
cheap	yasui
cold	samui
difficult	mitsukashii
early	hayai/hayaku
easy	kantanna/kantanni
expensive	takai
far	toi/toku
good	ii
hot	atsui
interesting	omoshiroi
late	osoi/osoku
long	nagai/nagaku
narrow	semai
near	chikai/chikaku
never	zenzen
quick	hayai
quickly	hayaku
short	mijikai/mijikaku
slowly	yukkuri
small	chisai
sometimes	tokidoki
wide	hiroi

## S5: Solar Wind Effects on Ionospheric Convection

Organizers: G. Lu and S. Cowley

Tuesday, October 3; Room 6

- 9:30 S5-01 TRAVELING CONVECTION VORTICES — CHARACTERISTICS AND ORIGINS  
D. G. SIBECK (Solicited)
- 9:50 S5-02 MULTIPOINT OBSERVATIONS OF TRANSIENT SOLAR WIND-MAGNETOSPHERE INTERACTIONS  
G. I. KOROTOVA, D. G. Sibeck, T. J. Rosenberg, H. Singer, A. T. Weatherwax, U. S. Inan
- 10:05 S5-03 SIGNATURES OF TRAVELING CONVECTION VORTEX (TCV) EVENTS IN THE MAGNETOGRAMS FROM THE EQUATORIAL ELECTROJET (EEJ) REGION  
N. B. TRIVEDI, D. G. Sibeck, E. Zesta, J. C. Santos, S. L. G. Dutra
- 10:25 S5-04 THE FIELD-ALIGNED CURRENTS OF TRAVELING CONVECTION VORTICES: FAST SPACECRAFT AND GROUND OBSERVATIONS  
E. ZESTA, R. J. Strangeway, D. Murr, D. Sibeck
- 10:35 S5-05 VARIATION OF HIGH-LATITUDE IONOSPHERIC CURRENTS IN RESPONSE TO SOLAR WIND AND/OR IMF VARIATIONS  
J. WATERMANN, O. Rasmussen, V. Popov, C. R. Clauer, V. O. Papitashvili
- 10:50 Break
- 11:10 S5-06 TRAVELING CONVECTION VORTICES: OBSERVATIONS AND A MHD MODEL COMPARED  
W. J. HUGHES, D. L. Murr, J. A. Fedder, S. P. Slinker
- 11:25 S5-07 SCENARIO COVERING ALL PHASES OF NIGHTSIDE CONVECTION BASED ON INTERPLAY BETWEEN ION DRIFT AND RECONNECTION PROCESSES  
G. ATKINSON
- 11:40 S5-08 MAGNETIC IMPULSE EVENT: A DETAILED CASE STUDY OF EXTENDED GROUND AND SPACE OBSERVATIONS  
R. KATAOKA, H. Fukunishi, L. J. Lanzerotti, C. G. MacLennan, H. U. Frey, S. B. Mende, J. H. Doolittle, T. J. Rosenberg, M. Engebretson, N. Sato, T. Sakanai
- 11:55 S5-09 TRANSIENT PLASMA FLOW RESPONSE TO SOLAR WIND DYNAMIC PRESSURE CHANGE AS OBSERVED BY SUPERDARN AND MAGNETOMETERS  
T. KIKUCHI, K. Hashimoto, T. Motoba, M. Ruohoniemi
- 12:10 S5-10 OPTICAL AND SUPERDARN SIGNATURES ASSOCIATED WITH SC/SI  
N. SATO, H. Yamagishi, A. S. Yukimatu, M. Watanabe, M. Ejiri, M. Okada, S. Okano, Yang Huigen, Liu Ruiyuan, M. Lester, J-P. Villain, M. Pinnock, F. J. Rich
- 12:25 Lunch
- 14:00 S5-11 FLUX TRANSFER EVENTS AND RELATED PHENOMENA  
S. E. MILAN (Solicited)
- 14:20 S5-12 IONOSPHERIC CUSP FLOWS PULSED BY SOLAR WIND ALFVEN WAVE COUPLING TO THE DAYSIDE MAGNETOPAUSE  
P. PRIKRYL, G. Provan, K. A. McWilliams, T. K. Yeoman
- 14:35 S5-13 FIELD AND PLASMA PROPERTIES INSIDE AND VICINITY OF THE CUSP  
M. Yamauchi, I. SANDAHL, R. Lundin, L. Eliasson, S. Ohtani, P.-A. Lindqvist
- 14:50 S5-14 STATISTICAL AND CASE STUDIES OF DPY CURRENTS BASED ON ØRSTED SATELLITE AND POLAR GROUND-BASED OBSERVATIONS  
P. STAUNING, F. Primdahl, J. Watermann, F. Christiansen, T. Christensen, V. Papitashvili, O. Rasmussen
- 15:05 S5-15 FIELD-ALIGNED CURRENT DISTRIBUTIONS OBSERVED FROM ØRSTED  
T. NEUBERT, V. O. Papitashvili, F. Christiansen
- 15:20 Break

- 15:40 S5-16 AN INVESTIGATION OF IMPULSIVE TRANSIENTS IN THE HIGH-LATITUDE IONOSPHERE USING THE SOUTHERN HEMISPHERE IMAGING RIOMETER  
M. B. Terkildsen, B. J. FRASER, F. W. Menk
- 15:55 S5-17 SOLAR WIND DEPENDENCY OF THE AURORAL ELECTROJET AS OBSERVED WITH THE ØRSTED SATELLITE DURING THE SEPTEMBER 1999 SPACE WEATHER MONTH  
T. MORETTO, N. Olsen
- 16:10 S5-18 POLAR CAP AND AURORAL OVAL DYNAMICS DURING 22-24 SEPTEMBER, 1998  
C. R. CLAUER, I. Alexeev, E. Belenkaya
- 16:25 S5-19 IONOSPHERIC ELECTRODYNAMICS RESPONSE TO THE SOLAR WIND VOID OF 10-12 MAY 99  
D. KNIPP, C. H. Lin, B. Emery
- 16:40 S5-20 A LINKAGE BETWEEN POLAR PATCHES AND PLASMASPHERIC DRAINAGE PLUME  
M. F. Thomsen, YI-JIUN SU, J. E. Borovsky, J. C. Foster

#### Thursday, October 5; Room 6

- 14:00 S5-21 LARGE-SCALE IONOSPHERIC FLOWS AND THEIR RESPONSE TO VARIATIONS IN THE INTERPLANETARY MEDIUM  
J. M. RUOHONIEMI (Solicited)
- 14:20 S5-22 LARGE-SCALE CONVECTION RESPONSE TO IMF BZ CHANGE — A POLAR CAP ARC STUDY  
E. BORALV, H. J. Ogennoorth, I. J. Rae, M. J. Brittnacher, E. Donovan, F. Pitout
- 14:35 S5-23 NON-LOCAL RESPONSES IN IONOSPHERIC CONVECTION TO SOLAR WIND EFFECTS  
P. EGLITIS, B. Jackel, E. Donovan, H. J. Ogennoorth
- 14:50 S5-24 GLOBAL IONOSPHERIC RESPONSE TO INTERPLANETARY MAGNETIC FIELD CHANGES  
G. LU, J. M. Ruohoniemi, T. Hughes, P. Stauning, O. Troshichev
- 15:05 S5-25 RECONFIGURATION TIMESCALES OF DAYSIDE IONOSPHERIC CONVECTION  
D.L. MURR, W. J. Hughes
- 15:20 Break
- 15:40 S5-26 MHD MODEL RESULTS OF THE MAGNETOSPHERIC RESPONSE TO IMF DISCONTINUITIES: THE EFFECTS OF LOWERING THE INNER MAGNETOSPHERIC ALFVEN VELOCITY  
A. RIDLEY, D. DeZeeuw, T. Gombosi, K. Powell, G. Toth
- 15:55 S5-27 EVOLUTION OF CUSP PLASMA FLOW AND LARGE-SCALE CONVECTION VORTEX  
K. HASHIMOTO, T. Kikuchi, M. Ruohoniemi, T. Ogino, A. Ridley, P. Stauning
- 16:10 S5-28 CHARACTERISTICS OF IONOSPHERIC CONVECTION OBSERVED BY SYOWA EAST/SOUTH SUPERDARN RADARS DURING MAY 10-13, 1999  
N. NISHITANI, T. Ogawa, N. Sato, H. Yamagishi, A. S. Yukimatu
- 16:25 S5-29 EFFECT OF INTERPLANETARY MAGNETIC FIELD ON EQUATORIAL IONOSPHERE  
L. SIZOVA, M. Pudovkin
- 16:40 S5-30 IMF-DEPENDENT POTENTIAL MODEL HAVING SPACE-WEATHER APPLICATIONS  
S. TAGUCHI

S5

#### Poster Session

##### Thursday, October 5; Sapporo Media Park

9:30 - 12:30

- S5-P01 RELATION OF THE IONOSPHERIC CONVECTION TO THE SOLAR WIND PARAMETERS  
E. Y. Feshchenko, Y. P. Maltsev
- S5-P02 PROPAGATION VELOCITIES OF GEOMAGNETIC SUDDEN IMPULSES CAUSED BY SHARP CHANGES OF SOLAR WIND DYNAMIC PRESSURE AT HIGH LATITUDES  
G. A. MAKAROV, A. V. Moiseyev, S. I. Solov'yev
- S5-P03 NON-STATIONARY RECONNECTION IN REGION OF LOW LATITUDE DAWN MAGNETOPAUSE DETECTED BY INTERBALL-1  
T. V. KUZNETSOVA, D. Sibeck, L. B. Tsirulnik, V. I. Odintsov, N. Borodkova



- S5-P04 THE DISTENTION OF THE MAGNETOSPHERE ON MAY 11, 1999: HIGH LATITUDE ANTARCTIC OBSERVATIONS AND COMPARISONS WITH LOW LATITUDE MAGNETIC AND GEOPOTENTIAL DATA  
A. T. Weatherwax, T. J. Rosenberg, L. J. Lanzerotti, C. G. MacLennan, H. U. Frey, S. B. Mende
- S5-P05 THE RELATIONSHIP OF VLF EMISSIONS, RIOMETER ABSORPTION, AND AURORAL LUMINOSITY TO THE MAGNETIC SIGNATURES OF MAGNETIC IMPULSE EVENTS (MIES)  
S. N. SAMSONOV, A. T. Weatherwax, T. J. Rosenberg, L. J. Lanzerotti, C. G. MacLennan, U. S. Inan, M. A. Salvati, H. U. Frey, S. B. Mende
- S5-P06 THE IONOSPHERIC CUSP'S RESPONSE TO A SHARP SOUTHWARD TURNING OF THE IMF: A CASE STUDY  
M. WATANABE, P. E. Sandholt, M. Lester, N. Sato
- S5-P07 RESPONSE OF THE AFTERNOON CONVECTION CELL TO AN IMF SOUTHWARD TURNING  
N. NISHITANI, T. Ogawa, N. Sato, H. Yamagishi, M. Pinnock, J.-P. Villain, G. Sofko
- S5-P08 THE RELATIONSHIP BETWEEN THE LATITUDINAL LOCATIONS OF THE AURORAL ELECTROJETS AND THEIR CURRENT DENSITY  
B.-H. AHN, W. Sun, G. Chen, J. Watermann
- S5-P09 CME EFFECTS ON IONOSPHERIC CONDITION  
V. M. Fridman, N. D. Krupenya, E. E. Mityakova, A. V. Rakhlin, O. A. SHEINER
- S5-P10 PLASMA WITHIN AN IMF-BY RELATED POLEWARD PROGRESSING MAGNETIC DISTURBANCE: EISCAT SVALBARD RADAR OBSERVATION AND TRANSCAR SIMULATION  
F. PITOUT, P. L. Blelly, H. Nilsson
- S5-P11 THE TIME DELAY IN THE CAUSAL ANALYSIS OF EQUATORIAL IONOSPHERIC PROCESSES  
L. SIZOVA
- S5-P12 DETERMINATION OF THE IONOSPHERIC CONVECTION ELECTRIC POTENTIAL BASED ON SUPERDARN VELOCITY MEASUREMENTS  
S. G. Shepherd, J. M. RUOHONIEMI
- S5-P13 IONOSPHERIC CONVECTION FROM THE GLOBAL MHD SIMULATION ON THE EVENT ON NOVEMBER 17, 1996  
S. ICHIYANAGI, T. Ogino

## S6: Comparison of Observations and Simulations of Global Magnetospheric Structure

Organizers: G. Rostoker and T. Pulkkinen

Monday, October 2; Room 3

Chairperson: G. Rostoker

- 9:30 S6-01 DYNAMICS OF GLOBAL AND LOCAL AURORAL FEATURES IN RELATION TO ENERGY COUPLING FROM THE SOLAR WIND AND THE MAGNETOTAIL  
M. BRITTNACHER, D. Chua, M. Fillingim, G. Parks, W. Peria, R. Winglee, J. Spann, G. Germany, D. Lummerzheim, G. Lu, J. Baker, R. Clauer (Solicited)
- 10:00 S6-02 MODELING AURORAL PRECIPITATION DURING SUBSTORMS USING GLOBAL MAGNETOHYDRODYNAMIC SIMULATIONS  
M. ASHOUR-ABDALLA, M. El-Alaoui, R. Walker, L. A. Frank, J. B. Sigwarth, W. R. Paterson
- 10:15 S6-03 CUSP IONOSPHERE: EISCAT SVALBARD RADAR OBSERVATIONS AND TRANSCAR SIMULATIONS  
F. PITOUT, P. L. Blelly, A. Vontrat
- 10:30 S6-04 A PARTICLE-DRIFT MODEL OF THE QUIET-TIME INNER PLASMA SHEET WITH APPROXIMATE MAGNETIC FIELD SELF-CONSISTENCY  
C.-P. Wang, L. R. LYONS, M. W. Chen, R. A. Wolf
- 10:45 Break
- 11:10 S6-05 ENERGY COUPLING BETWEEN THE SOLAR WIND AND THE UPPER ATMOSPHERE ON A RANGE OF TIMESCALES  
M. L. Lockwood, I. FINCH, R. Stamper
- 11:40 S6-06 THE IONOSPHERIC CLOSURE OF AURORAL CURRENTS  
A. Masson, H. Opgenoorth, P. Eglitis
- 11:55 S6-07 OBSERVED AND SIMULATED NORTHERN POLAR CUSP POSITION AS FUNCTION OF INTERPLANETARY MAGNETIC FIELD  
M. PALMROTH, H. Laakso, P. Janhunen, T. I. Pulkkinen
- 12:10 S6-08 PARTICLE SIMULATION OF THE MESO-SCALE STRUCTURE OF THE RING CURRENT  
H. Nilsson, Y. Ebihara, M. Yamauchi, S. Kirkwood, M. Ejiri
- 12:25 Lunch

S6

Chairperson: T. Pulkkinen

- 14:00 S6-09 MAGNETOSPHERE-IONOSPHERE COUPLING: GLOBAL MHD MODELS  
P. SONG, D. L. De Zeeuw, T. I. Gombosi, K. G. Powell, A. Ridley (Solicited)
- 14:30 S6-10 MHD SIMULATION OF THE SOLAR WIND-MAGNETOSPHERE INTERACTION AND RELATIONSHIP WITH POLAR PHENOMENA  
T. OGINO (Solicited)
- 15:00 S6-11 GLOBAL MODELING OF EARTH'S GEOSPACE ENVIRONMENT AND DATA COMPARISONS  
J. Raeder, Y. Wang, T. Fuller-Rowell
- 15:15 Break
- 15:40 S6-12 FAST FLOWS IN MHD SIMULATIONS OF MAGNETOTAIL DISRUPTION  
J. BIRN, M. Hesse (Solicited)
- 16:10 S6-13 CAN NEAR-EARTH REGION AURORAL PLASMA PHYSICS BE INCORPORATED IN LARGE-SCALE MHD MODELS?  
P. JANHUNEN (Solicited)
- 16:40 S6-14 ON THE EQUIVALENCE BETWEEN ELECTROMAGNETIC AND MECHANICAL LOADS IN THE MAGNETOSPHERE-IONOSPHERE SYSTEM  
R. J. STRANGEWAY, J. Raeder

**Poster Session**

**Wednesday, October 4; Sapporo Media Park**

8:30 - 12:00

- S6-P01 ELECTRIC CURRENT DENSITY DISTRIBUTION IN THE GEOMAGNETIC TAIL BASED ON GEOTAIL DATA  
P. ISRAELEVICH, A. Ershkovich, N. Tsyganenko
- S6-P02 STREAM FUNCTION METHOD FOR RECONSTRUCTION OF IONOSPHERIC CONVECTION PATTERNS  
P. ISRAELEVICH, V. Papitashvili, A. Ershkovich
- S6-P03 LONG-TERM, GLOBAL OBSERVATIONS OF SUPRATHERMAL ION OUTFLOW  
W. K. PETERSON, H. L. Collin, A. W. Yau, O. W. Lennartsson
- S6-P04 SYNERGETIC EFFECTS OF CURRENT DISRUPTION AND FLOW BRAKING FOR SUBSTORM ONSET WITH A SOUTHWARD IMF  
K. NISHIKAWA, S. Ohtani
- S6-P05 VARIATION OF POLAR CAP DENSITY  
H. Laakso, R. Pfaff
- S6-P06 ON PROBLEM OF ENERGY TRANSFER FROM THE SOLAR WIND INTO THE OPEN MAGNETOSPHERE  
V. V. SHELOMENTSEV
- S6-P07 ELECTRON DENSITY RESULTS FROM A GLOBAL PLASMASPHERE MODEL — COMPARISONS TO LOW EARTH ORBIT SATELLITE OBSERVATIONS  
P. A. Webb, E. A. ESSEX
- S6-P08 MSM TRACING OF MAGNETOSPHERIC PARTICLES USING THE KRM-DERIVED ELECTRIC FIELDS  
M. ISOWA, H. Shirai, Y. Kamide, B. Hausman, J. Freeman
- S6-P09 THE MALIN-ISIKARA EFFECT: SEMI-ANNUAL VARIATION OF THE GEOMAGNETIC Dst INDEX  
E. W. CLIVER, Y. Kamide, A. G. Ling, N. Yokoyama
- S6-P10 DOES THE APPEARANCE OF HIGH-LATITUDE SUBSTORMS DEPEND ON SOLAR WIND THERMAL PRESSURE?  
I. V. DESPIRAK, A. A. Lubchich
- S6-P11 ANTI-SUNWARD CURRENT SYSTEM OBSERVED BY THE OERSTED SATELLITE  
S. YAMASHITA, T. Iyemori, S. Nakano, T. Araki, T. Kamei
- S6-P12 MHD MODELING OF THE SOLAR WIND DISTURBANCES-EARTH MAGNETOSPHERE INTERACTION  
N. Barkhatov, N. Belliustin, N. Emel'yanov, P. Khurlapov
- S6-P13 ON UNUSUAL MAGNETIC FIELD ON GEOSTATIONARY ORBIT IN LOCAL MIDNIGHT  
S. N. Kuznetsov, T. Fritz
- S6-P14 PROPERTIES OF THE PLASMA SHEET AND THEIR CONNECTION WITH MAGNETOSPHERIC PLASMA TRANSPORT  
M. NISHINO, T. Terasawa, M. Hoshino
- S6-P15 COORDINATED STUDY ON THE ELECTRODYNAMICS AROUND THE MOST POLEWARD ARC SYSTEM OF THE DOUBLE OVAL CONFIGURATION IN A SUBSTORM WITH EISCAT, SATELLITES, AND GROUND-BASED  
A. KADOKURA, T. Aso, N. Sato, I. Haeggstroem, A. van Eyken, A. Brekke, D. A. Lorentzen, J. Moen, D. Rees, M. Syrjasuo, P. E. Sandholt, K. Hayashi, R. W. Smith, T. Mukai, C. W. Carlson
- S6-P16 A SURVEY OF ION DISTRIBUTIONS FOUND IN THE MID TO DISTANT PLASMA SHEET  
R. T. MIST, C. J. Owen, T. Mukai, T. Nagai
- S6-P17 APPROXIMATION FOR THE MAGNETOSPHERIC MAGNETIC FIELD  
Y. P. MALTSEV, A. A. Ostapenko

## S7: Tail Plasma Flows and Ionospheric Consequences

Organizers: V. Angelopoulos and T. Nagai

### Monday, October 2; Room 6

Chairperson: V. Angelopoulos

- 9:30 S7-01 FAST MAGNETOSPHERIC CONVECTION AND ITS IONOSPHERIC COUPLING  
V. M. VASYLIUNAS (Solicited)
- 9:50 S7-02 DO THE OBSERVATIONS CONFIRM THE HIGH-SPEED FLOW BRAKING MODEL FOR  
SUBSTORMS?  
A. G. YAHNIN, I. A. Kornilov, T. A. Kornilova, V. A. Sergeev, A. T. Y. Lui, K. Liou, C.-I. Meng,  
A. Pajunpaa, T. Mukai, S. Kokubun, L. A. Frank
- 10:10 S7-03 INFLUENCE OF THE IONOSPHERE ON MAGNETOTAIL CONVECTION  
R. LYSAK, Y. Song (Solicited)
- 10:30 S7-04 A QUANTITATIVE EXPRESSION OF THE ELECTRIC-FIELD PROPAGATION IN THE  
MAGNETOTAIL AND ITS APPLICATION TO THE CONJUNCTION STUDY BETWEEN AKEBONO  
AND GEOTAIL  
A. MATSUOKA, H. Hayakawa, T. Mukai
- 10:50 Break
- 11:10 S7-05 NON-MHD EFFECTS IN FIELD-ALIGNED CURRENT GENERATION BY RECONNECTION JET  
M. FUJIMOTO, M. S. Nakamura (Solicited)
- 11:30 S7-06 THE GENERATION AND CONSEQUENCES OF FIELD-ALIGNED CURRENTS FROM FAST FLOWS  
AS SEEN IN MHD SIMULATIONS  
J. BIRN, M. Hesse (Solicited)
- 11:50 S7-07 FLOW CHANNELS IN THE MAGNETOTAIL: TAIL AND IONOSPHERIC OBSERVATIONS  
COMPARED WITH GLOBAL MHD SIMULATIONS  
T. I. PULKKINEN, K. Kauristie, M. Wiltberger, J. G. Lyon, D. N. Baker, T. Mukai, S. Kokubun
- 12:10 S7-08 ISTP OBSERVATIONS OF THE TEMPORAL AND SPATIAL EVOLUTION OF MAGNETOSPHERIC  
SUBSTORMS  
J. A. SLAVIN, D. H. Fairfield, R. P. Lepping, M. Hesse, A. Ieda, E. Kallio, T. Mukai, T. Nagai,  
M. Brittner, G. Parks, H. J. Singer, G. Rostoker, P. R. Sutcliffe
- 12:30 Lunch

Chairperson: T. Nagai

- 14:00 S7-09 EVIDENCE IN IONOSPHERIC CONVECTION FOR MAGNETOSPHERIC ENERGY SURGES  
R. A. GREENWALD, J. M. Ruohoniemi (Solicited)
- 14:20 S7-10 DOUBLE AURORAL BAND FORMATION IN THE POLEWARD EXPANSION OBSERVED BY  
IMAGING RIOMETERS AT 75-77 INVARIANT LATITUDE  
H. YAMAGISHI, M. Nishino, P. Stauning, R. Liu
- 14:40 S7-11 MAGNETOSPHERIC ENERGY SURGES AND THEIR IONOSPHERIC COUNTERPART: GEOTAIL-  
POLAR OBSERVATIONS  
R. NAKAMURA (Solicited)
- 15:00 S7-12 WIND AND GEOTAIL OBSERVATIONS OF HIGH SPEED FLOWS IN THE MID-TAIL AND NEAR-  
EARTH PLASMA SHEET AND THEIR IONOSPHERIC SIGNATURES  
M. OIEROSET, T. Phan, M. Fujimoto, V. Angelopoulos, R. Lin
- 15:20 Break
- 15:40 S7-13 COMPREHENSIVE OBSERVATIONAL EVALUATION OF THE MAGNETOSPHERIC INSTABILITY  
ASSOCIATED WITH FAST FLOWS  
I. Shinohara, T. Nagai, M. FUJIMOTO, T. Mukai, K. Tsuruda (Solicited)

S7

- 16:00 S7-14 SIMULTANEOUS MULTIPLE SATELLITE STUDIES OF FAST FLOWS AT ALTITUDES: THE INTERBAL PERSPECTIVE  
J.-A. SAUVAUD, D. Popescu, V. Sergeev, G. K. Parks, T. Mukai, S. Kokubun, R. A. Kovrazhkin, M. Syrjasno, V. N. Lutsenko (Solicited)
- 16:20 S7-15 THE AURORAL SIGNATURE OF MAGNETOTAIL FLOW BURSTS  
E. Zesta, L. R. Lyons, E. Donovan
- 16:40 S7-16 A POSSIBLE FATE OF THE EARTHWARD ION FLOW INTO THE LOW-L REGION: PARTICLE SIMULATIONS AND VIKING OBSERVATIONS  
Y. EBIHARA, M. Yamauchi, H. Nilsson, R. Lundin, M. Ejiri

## Poster Session

Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S7-P01 CHARACTERISTIC ENHANCEMENT OF LOBE ION DENSITY ASSOCIATED WITH THE PASSAGE OF A PLASMOID: 1. AN ANTI-SUNWARD MOVEMENT OF THE NENL AFTER PLASMOID EJECTION  
T. TAKADA, H. Shirai, T. Mukai
- S7-P02 CHARACTERISTIC ENHANCEMENT OF LOBE ION DENSITY ASSOCIATED WITH THE PASSAGE OF A PLASMOID: 2. DETAILED ANALYSIS OF THE EVENTS  
H. SHIRAI, T. Takada, T. Mukai
- S7-P03 ION AND ELECTRON PARAMETERS IN THE DISTANT MAGNETOTAIL ON THE BASIS OF GEOTAIL OBSERVATIONS  
T. MOTOKAWA, M. Hirahara, T. Mukai
- S7-P04 ENERGETIC PARTICLE SIGNATURES OF RECONNECTION AND PLASMOID FORMATION IN THE MAGNETOTAIL  
S. HAALAND, N. Oestgaard, J. Bjordal, J. Stadsnes, F. Soeraas, S. Ullaland, B. Wilken, Q. G. Zong, T. Yamamoto, T. Doke, D. L. Chenette, G. K. Parks, M. J. Brittacher, G. D. Reeves
- S7-P05 FAST PLASMA FLOWS IN THE MID AND NEAR-EARTH MAGNETOTAIL: THEIR SPATIAL DISTRIBUTION AND IMF BZ DEPENDENCE  
K. Maezawa, T. Hori, T. Mukai, Y. Saito
- S7-P06 CONSIDERATIONS REGARDING THE DRIVING OF FIELD-ALIGNED CURRENTS FROM THE EQUATORIAL MAGNETOTAIL  
V. ANGELOPOULOS, F. S. Mozer, M. Woodruff, T. Mukai, K. Tsuruda
- S7-P07 GEOTAIL OBSERVATIONS OF THE TAIL MAGNETIC FIELD STRUCTURE  
T. NAGAI
- S7-P08 BURSTS OF FAST MAGNETOTAIL FLUX TRANSPORT  
W. Baumjohann, R. Schoedel, R. Nakamura
- S7-P09 COMPARISON BETWEEN TAILWARD FLOWS IN THE LOBE/MANTLE AND ION PRECIPITATION ONTO POLAR IONOSPHERE: GEOTAIL AND FAST OBSERVATIONS  
K. SEKI, R. C. Elphic, M. F. Thomsen, J. Bonnell, E. J. Lund, M. Hirahara, T. Terasawa, T. Mukai
- S7-P10 RELATIONSHIP BETWEEN SUBSTORM MAGNITUDE AND SUBSTORM ENERGY STORAGE-RELEASE PROCESSES  
R. YAMAGUCHI, H. Kawano, S. Ohtani, K. Yumoto, S. Kokubun, T. Mukai, CPMN group
- S7-P11 DIFFERENCE OF PLASMA PROPERTIES IN THE LOW-ALTITUDES BETWEEN POSITIVE AND NEGATIVE IMF-BZ CONDITIONS: STATISTICS OF AKEBONO OBSERVATIONS  
K. ASAI, K. Maezawa, T. Mukai, H. Hayakawa, the Geotail group
- S7-P12 MANIFESTATION OF NONLINEAR RESONANT INTERACTIONS IN THE CURRENT SHEET: INTERBALL-1 BEAMLET OBSERVATIONS  
E. E. GRIGORENKO, L. M. Zelenyi, A. O. Fedorov

- S7-P13** RELATIVE TIMING OF MAGNETOTAIL PHENOMENA AND AURORAL BREAKUP: IMPLICATION FOR THE SUBSTORM ONSET LOCATION  
A. G. YAHNIN, V. A. Sergeev, M. V. Kubyshkina, T. I. Pilkinen, K. Liou, C.-I. Meng, T. Mukai, S. Kokubun, D. G. Baishev
- S7-P14** CASE STUDIES OF MAGNETOTAIL VARIATIONS AND AURORAL ACTIVITIES DURING SUBSTORMS  
Y. MIYASHITA, S. Machida, T. Mukai, Y. Saito, K. Liou, C.-I. Meng, G. Parks
- S7-P15** GENERATION OF BURSTY BULK FLOWS BY RECONNECTION AND FLOW BRAKING  
K.-I. NISHIKAWA
- S7-P16** RECONNECTION AND CONVECTION MEASUREMENTS FOR DIFFERENT DEGREES OF SOLAR WIND-MAGNETOSPHERE COUPLING  
E. R. SANCHEZ, R. A. Doe, A. T. Y. Lui, K. Liou, S. Shepherd, A. Ridley, J. Sigwarth, L. Lyons, G. Blanchard, T. Mukai
- S7-P17** MAGNETIC FIELD CONFIGURATION AND PLASMA FLOW IN THE NEAR-EARTH MAGNETOTAIL DURING STORM TIME: GEOTAIL OBSERVATIONS  
S. KOKUBUN, T. Nagai, T. Mukai

### Japanese Lesson 3

#### Useful Japanese Phrases

##### ◆ Greetings

How do you do?  
Good Morning.  
Hello.  
Good Evening.  
Good bye.

Hajime mashite.  
Ohayo Gozaimasu.  
Konichiwa.  
Konbanwa.  
Sayonara.

##### ◆ Basic Phrases

Nice to meet you.  
My name is ...  
Excuse me.  
I'm sorry.  
Thank you very much.  
Can you speak English?  
Can you please write that in Japanese?

O-ai dekite ureshii desu.  
... to moshimasu.  
Sumimasen.  
Sumimasen.  
Domo arigato gozaimasu.  
Eigo o hanasemasu ka?  
Kore o Nihongo de kaite moraemasuka?

##### ◆ Asking the Way on the Street/in a Taxi

Where is the ...?  
Please take me to ...  
How much is it to the (place)?  
How long does it take to get to ...?

... wa doko desu ka?  
... e itte kudasai.  
(place) made ikura desuka?  
... made jikanwa donokurai desuka?

##### ◆ Shopping

How much is this?  
Please show me that.  
Isn't there something less expensive?  
I'll take this.

Kore wa ikura desu ka?  
Are o misete kudasai.  
Motto yasui no wa arimasenka?  
Kore o kudasai.

## **S8: Storm-Time Ring Current**

Organizers: I. A. Daglis and J. Kozyra

### **Thursday, October 5; Room 2**

Chairperson: I. A. Daglis

- 14:00 S8-01 THE IMAGE MISSION — GLOBAL VIEWS OF A GEOMAGNETIC STORM  
J. L. GREEN, J. L. Burch, B. Reinisch, W. W. L. Taylor, S. F. Fung (Solicited)
- 14:30 S8-02 THE POLAR VIEW OF THE STORM-TIME RING CURRENT  
J. L. ROEDER, J. F. Fennell, M. Grande, T. A. Fritz, S. Livi (Solicited)
- 14:55 S8-03 A SIMULATION SCHEME FOR HIGH ENERGY PARTICLES IN THE INNER MAGNETOSPHERE: Dst  
AND THE RING CURRENT FORMATION  
M. EJIRI, Y. Ebihara (Solicited)
- 15:20 Break
- 15:40 S8-04 THE ROLE OF THE LARGE SCALE ELECTRIC FIELD IN THE DYNAMICS THE RING CURRENT  
J. R. WYGANT, D Rowland, H. Singer, A. Korth, J. B. Blake (Solicited)
- 16:05 S8-05 RETHINKING THE ROLE OF SOLAR WIND NUMBER DENSITY IN RING CURRENT  
DEVELOPMENT  
T. P. O'BRIEN, R. L. McPherron
- 16:20 S8-06 ROLES OF CONVECTION AND SUBSTORM ELECTRIC FIELDS ON RING CURRENT GROWTH  
M.-C. FOK, T. E. Moore, S. Slinker, J. A. Fedder, D. C. Delcourt (Solicited)
- 16:45 S8-07 MODELING INNER MAGNETOSPHERIC CONVECTION AND RING CURRENT EVOLUTION  
DURING MARCH 10-12, 1998  
V. JORDANOVA, L. Kistler, C. Farrugia, J. Quinn

### **Friday, October 6; Room 2**

Chairperson: J. Kozyra

- 9:30 S8-08 NUMERICAL SIMULATIONS OF O+ ACCELERATION IN A POTENTIAL WELL  
A. Anastasiadis, I. A. DAGLIS, and I. D. Kontodinas
- 9:45 S8-09 INFLUENCE OF EMIC WAVES ON RING CURRENT DYNAMICS  
R. M. THORNE, V. K. Jordanova (Solicited)
- 10:10 S8-10 INFLUENCE OF IONOSPHERIC OXYGEN IONS ON PLASMA SHEET AND RING CURRENT  
DYNAMICS  
G. S. LAKHINA
- 10:25 S8-11 STORM-SUBSTORM RELATIONSHIP AND RING CURRENT GROWTH  
A. S. SHARMA (Solicited)
- 10:50 Break
- 11:10 S8-12 RING CURRENT OBSERVATIONS DURING THE INTENSE STORMS OF 1991  
I. A. DAGLIS, Y. Kamide, A. Anastasiadis, G. Tsiropoula
- 11:25 S8-13 INFLUENCE OF SOLAR WIND VARIATIONS ON IONOSPHERIC OUTFLOW  
T. E. MOORE, M. O. Chandler, M. R. Collier, H. A. Elliott, B. El Marji, B. L. Giles,  
R. J. Strangeway (Solicited)
- 11:50 S8-14 THE BUILDUP OF IONOSPHERIC IONS IN THE MAGNETOSPHERE DURING STORMS AND THEIR  
ROLE IN THE FORMATION OF ENERGETIC POPULATIONS IN THE RING CURRENT  
R. M. WINGLEE (Solicited)
- 12:15 S8-15 ION COMPOSITION CHANGE IN THE NEAR-EARTH PLASMA SHEET DURING MAGNETIC  
STORMS  
M. NOSE, S. Ohtani, K. Takahashi, A. T. Y. Lui, R. W. McEntire, D. J. Williams
- 12:30 Lunch

Chairperson: T. Moore

- 14:00 S8-16 RING CURRENT ESTIMATED FROM LOW ALTITUDE OBSERVATIONS  
F. Soraas, K. Aarsnes, K. Oksavik

- 14:15 S8-17 THE TEMPORAL AND SPATIAL DEVELOPMENT OF THE RING CURRENT DISTURBANCE FIELD DURING THE GEM STORMS: OBSERVATIONS AND MODEL SIMULATION  
C. R. CLAUER, M. W. Liemohn, J. Lande, J. U. Kozyra
- 14:30 S8-18 JUNE 4-5, 1991 MAGNETIC STORM: A CASE STUDY  
T. GARNER, R. A. Wolf, R. W. Spiro, W. J. Burke, N. C. Maynard, M. Hairston, M. F. Thomsen, G. D. Reeves, J. L. Roeder
- 14:45 S8-19 STORM GEOEFFECTIVENESS AND RING CURRENT MODELING OF THE SEPTEMBER 1999 CAMPAIGN STORMS  
J. U. KOZYRA, M. W. Liemohn, A. Ridley, M. F. Thomsen, J. E. Borovsky
- 15:05 S8-20 WAVE STRUCTURE OF THE POLARIZATION JET AND RING-CURRENT ION PRECIPITATION DURING SEVERE DISTURBANCES  
J. C. Foster, P. J. Erickson, F. D. Lind, E. V. Mishin, H. B. Vo, F. J. Rich
- 15:20 *Break*
- 15:40 S8-21 LOCAL TIME MAGNETIC FIELD PERTURBATIONS FROM THE RING CURRENT: COMPARISONS OF OBSERVATIONS AND THEORY  
M. W. LIEMOHN, C. R. Clauer, A. Ridley, J. Lande, J. U. Kozyra
- 15:55 S8-22 RELATIONSHIP OF THE RING CURRENT TO Dst  
N. E. TURNER, D. N. Baker, T. I. Pulkkinen, J. L. Roeder, J. F. Fennell, R. L. McPherron
- 16:10 S8-23 SINGLY CHARGED OXYGEN AS A PROXY FOR Dst  
R. J. STRANGWAY
- 16:25 S8-24 STORM-TIME RING CURRENT AS A "DRIVER" OF Dst  
I. A. DAGLIS, S. Koumi, C. Mouikis, W. D. Gonzalez
- 16:40 S8-25 MAGNETIC DISTURBANCES RESTORATION ON LOW LATITUDE MAGNETIC STATIONS BY ARTIFICIAL NEURAL NETWORK TECHNIQUE  
N. Barkhatov, A. Levitin, S. Sakharov, A. Solov'ev
- 16:55 S8-26 VARIABILITY OF THE RING CURRENT SOURCE POPULATION  
M. F. THOMSEN, J. E. Borovsky, H. Korth, S. Lynch

#### Poster Session

**Thursday, October 5; Sapporo Media Park**

9:30-12:30

- S8-P01 MAPPING INNER MAGNETOSPHERIC CONVECTION AND INJECTIONS FROM GROUND AND GEOSYNCHRONOUS MEASUREMENTS  
D. Vassiliadis, A. J. Klimas, V. Uritsky, M.-C. Fok, I. A. Daglis, I. A. Valdivia
- S8-P02 RELATIONSHIP OF SAR-ARC DYNAMIC CHARACTERISTICS TO THE GEOMAGNETIC ACTIVITY LEVEL  
V. N. ALEXEYEV, I. B. Ievenko
- S8-P03 GROWTH RATE AND DECAY OF MAGNETOSPHERIC RING CURRENT DURING GREAT MAGNETIC STORMS  
L. SIZOVA
- S8-P04 COMPARATIVE ANALYSIS OF ION COMPOSITION AND ENERGY SPECTRA OF THE RING CURRENT FOR THE SOLAR ACTIVITY MINIMUM AND MAXIMUM USING GEOSYNCHRONOUS SATELLITE DATA  
A. S. Kovtyukh, M. I. Panasyuk, E. N. Sosnovets, N. A. VLASOVA
- S8-P05 STORM-RELATED PLASMA CLOUD INSIDE THE MORNING RING-CURRENT REGION  
M. Yamauchi, R. Lundin, L. Eliasson, O. Norberg, Y. EBHARA
- S8-P06 SUB-KEV ION PLASMA CLOUD OBSERVATIONS INSIDE THE CPS-REGION DURING MAGNETICALLY QUIET CONDITIONS  
S. H. HOYMORK, Y. Narita, M. Yamauchi, Y. Ebihara, O. Norberg, D. Winningham
- S8-P07 STORM-TIME RING CURRENTS AND COSMIC RAYS: DIRECT AND INVERSE PROBLEMS  
L. I. DORMAN

**S8**



## **S9: Energetic Particle Dynamics in the Inner Magnetosphere**

Organizers: G. Reeves and T. Obara

### **Monday, October 2; Room 4**

Chairperson: G. Reeves

- 9:30 S9-01 SECULAR VARIATION OF HIGH ENERGY PARTICLE FLUXES IN THE SAA REGION  
Z. Y. PU, X. H. Fang
- 9:45 S9-03 ENERGETIC PARTICLE INJECTION AND SUBSTORM ONSET LOCATION  
S. Zaharia, C. Z. CHENG, J. R. Johnson
- 10:00 S9-04 ARE MAGNETIC STORMS QUALITATIVELY DIFFERENT FROM MAGNETOSPHERIC  
SUBSTORMS?  
A. KORTH, R. H. W. Friedel, C. Mouikis, Q. Zong, F. Frutos
- 10:15 S9-05 RELATION BETWEEN Dst AND RELATIVISTIC ELECTRONS DURING MAGNETIC STORMS  
M. Grande, M. Carter, C. H. Perry, B. Blake, J. Fennell, R. Nakamura, G. Reeves (Solicited)
- 10:35 S9-06 DYNAMICS OF OUTER RADIATION BELT ELECTRONS AS OBSERVED WITH THE SAMPEX AND  
POLAR SPACECRAFT  
D. N. BAKER
- 10:50 *Break*
- 11:05 S9-07 FORMATION OF NEW ELECTRON RADIATION BELT DURING MAGNETOSPHERIC  
COMPRESSION EVENT  
T. Obara, T. Nagatsuma, X. Li
- 11:20 S9-08 TESTING OF RELATIVISTIC ELECTRON ACCELERATION MECHANISMS  
J. GREEN, M. Kivelson
- 11:35 S9-09 ELECTRON RADIATION BELT ENHANCEMENTS: CONNECTIONS WITH GEOMAGNETIC  
ACTIVITY AND SOLAR WIND CONDITIONS  
R. V. HILMER (Solicited)
- 11:55 S9-10 THE DISTRIBUTION OF EXTREME RELATIVISTIC ELECTRON EVENTS AND THEIR SOLAR WIND  
DRIVERS: SOLAR MAX 1989 TO SOLAR MAX 2000  
G. D. Reeves, T. E. Cayton, R. H. W. Friedel, K. L. McAdams
- 12:10 S9-11 FULLY-ADIABATIC FLUX CHANGES, SUBSTORM INJECTION, AND RADIAL TRANSPORT OF  
RELATIVISTIC ELECTRONS  
A. CHAN, H.-J. Kim, R. Wolf, J. Birn (Solicited)
- 12:30 *Lunch*

Chairperson: T. Obara

- 14:00 S9-12 ACCELERATION PROCESS OF ENERGETIC ELECTRONS IN THE INNER MAGNETOSPHERE  
DURING MAGNETIC STORMS  
Y. MIYOSHI, A. Morioka, H. Misawa, T. Obara, T. Nagai
- 14:15 S9-13 ULF WAVEGUIDE MODES EXCITED BY HIGH SPEED MAGNETOSHEATH FLOWS AND THEIR  
POSSIBLE ROLE IN ACCELERATING RELATIVISTIC ELECTRONS  
I. R. MANN, R. A. Mathie (Solicited)
- 14:35 S9-14 SUBSTORM-DEPENDENCE OF CHORUS AMPLITUDES IN THE RADIATION BELTS:  
IMPLICATIONS FOR THE ACCELERATION OF ELECTRONS TO RELATIVISTIC ENERGIES  
R. B. HORNE, N. P. Meredith, R. R. Anderson
- 14:50 S9-15 EXTREMELY LOW FREQUENCY OSCILLATIONS IN HIGH ENERGY ELECTRON FLUXES AT THE  
CONCLUSION OF THE MAGNETIC STORM OF APRIL 2000  
G. ROSTOKER, H.-J. Kim, T. Onsager, T. Mukai
- 15:05 S9-16 RESONANT SCATTERING OF RELATIVISTIC ELECTRONS  
R. M. THORNE (Solicited)
- 15:25 *Break*
- 15:45 S9-17 INVESTIGATION OF RELATIVISTIC ELECTRON DYNAMICS USING LINEAR FILTER PREDICTION  
TECHNIQUES  
T. G. ONSAGER, C. Smithtro (Solicited)

- 16:00 S9-18 DYNAMICS OF ENERGETIC PARTICLES IN THE INNER RADIATION BELT DURING MAGNETIC STORMS  
A. MORIOKA, Y. Miyoshi, F. Tsuchiya, H. Misa
- 16:15 S9-19 ON THE RELATIVISTIC ELECTRON SOURCES DURING MAGNETIC STORMS: ANALYSIS WITH THE SALAMMBO CODE AND COMPARISON TO IN-SITU DATA  
R. FRIEDEL, S. Bourdarie (Solicited)
- 16:35 S9-20 THE ENERGETIC ELECTRON AND ION RESPONSE TO THE GEM MAGNETIC STORMS: HEO AND POLAR SATELLITE OBSERVATIONS  
J. F. Fennell, J. L. Roeder, J. B. Blake, R. Selesnick, M. Carter, G. Reeves (Solicited)
- 16:55 S9-21 GLOBAL COHERENCE OF RELATIVISTIC ELECTRON ENHANCEMENT EVENTS: MULTI-SATELLITE MEASUREMENTS DURING THE SOLAR CYCLE NUMBER 23  
S. G. Kanekal, D. N. Baker, J. B. Blake, M. L. Looper

## Poster Session

### Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S9-P01 THE DYNAMIC ENERGETIC RADIATION TRACKER (DILBERT): A NEW 3D DIFFUSION CODE  
J. ALBERT
- S9-P02 ENERGETIC ELECTRON RESPONSE DURING THE GEOMAGNETIC STORM OF SEPTEMBER 24-26, 1998  
S. R. ELKINGTON, M. K. Hudson, J. B. Blake, A. A. Chan
- S9-P03 FLUX ENHANCEMENT OF ENERGETIC PARTICLES IN THE NEAR-EARTH REGION: GEOTAIL-HEP OBSERVATION  
T. Hori, K. Maezawa, Y. Saito, T. Mukai, B. Wilken
- S9-P04 ACCELERATION OF OXYGEN IONS OF IONOSPHERIC ORIGIN IN THE NEAR-EARTH MAGNETOTAIL DURING SUBSTORMS  
M. NOSE, A. T. Y. Lui, S. Ohtani, B. H. Mauk, R. W. McEntire, D. J. Williams, T. Mukai, K. Yumoto
- S9-P05 EMPIRICAL RECONSTRUCTION AND ANALYSIS OF OUTER ZONE ENERGETIC ELECTRON SPECTRA AT ALL LOCAL TIMES  
T. P. O'BRIEN, R. L. McPherron, G. D. Reeves
- S9-P06 GLOBAL ULF WAVE ACTIVITY DURING THE MAY 15, 1997 MAGNETIC STORM  
V. PILIPENKO, O. Kozyreva, M. Engebretson, N. Kleimenova, J. Posch, O. Rasmussen
- S9-P07 ENERGY SPECTRA OF THE PLASMA SHEET AND RING CURRENT IONS: INTERBALL TAIL PROBE OBSERVATIONS  
N. F. PISARENKO, V. N. Lutsenko, I. P. Kirpichev, E. Yu. Budnik, E. E. Antonova
- S9-P08 INNER RADIATION BELT OF POSITRONS ORIGINATED IN NUCLEAR REACTIONS ON RAREFIED ATMOSPHERES  
G. PUGACHEVA, A. Gusev, U. Jayanthi, I. Martin, W. Spjeldvik
- S9-P09 TO WHAT EXTENT DYNAMICS OF EXTERNAL RADIATION BELT ELECTRON FLUXES DEPENDS ON THE PRE-HISTORY OF GEOMAGNETIC ACTIVITY  
G. Ya. SMOLKOV, V. I. Degtyarev, G. V. Popov, S. E. Chudnenko
- S9-P10 ENERGETIC ELECTRON PRECIPITATION FROM INNER MAGNETOSPHERE AND DIAGNOSTICS OF THE COLD PLASMA DISTRIBUTION IN THE EQUATORIAL PLANE  
T. A. Yahnina, A. G. Yahnin, E. E. Titova, A. G. Demekhov, J. Borovsky, M. Thomsen

S9

## **S10: Magnetic Reconnection: Theory and Simulations**

Organizers: J. Buechner and T. Terasawa

### **Tuesday, October 3; Room 5**

- 9:30 S10-01 MAGNETIC RECONNECTION — INTRODUCTORY LECTURE  
V. M. VASYLIUNAS (Solicited)
- 9:50 S10-02 NEW RESULTS OF MHD SIMULATIONS OF SUBSTORM MAGNETOTAIL DYNAMICS  
J. BIRN, M. Hesse (Solicited)
- 10:10 S10-03 RECONNECTION IN THE EARTH'S MAGNETOTAIL: RECENT OBSERVATIONS AND FUTURE OPPORTUNITIES  
J. A. SLAVIN (Solicited)
- 10:30 S10-04 MAGNETIC FIELD LINE TOPOLOGY OF THE EARTH'S MAGNETOSPHERE: RESULTS OF GLOBAL SIMULATIONS  
T. OGINO (Solicited)
- 10:50 *Break*
- 11:10 S10-05 THEORY OF COLLISIONLESS RECONNECTION: EFFECTS OF HALL CURRENT AND ELECTRON PRESSURE GRADIENT  
A. BHATTACHARJEE, Z. W. Ma, X. Wang (Solicited)
- 11:30 S10-06 COMPARISON BETWEEN THE MAGNETOTAIL VARIATIONS DURING SUBSTORMS OBTAINED FROM GEOTAIL DATA AND THOSE OBTAINED BY ELECTROMAGNETIC HYBRID SIMULATIONS  
S. MACHIDA (Solicited)
- 11:50 S10-07 EVIDENCE FOR RECONNECTION AND ASSOCIATED HALL EFFECTS IN THE MAGNETOTAIL: WIND OBSERVATIONS  
M. OIEROSET, T. Phan, R. Lin, B. Sonnerup
- 12:10 S10-08 SUPRATHERMAL ELECTRONS IN MAGNETIC RECONNECTION  
M. HOSHINO (Solicited)
- 12:30 *Lunch*
- 14:00 S10-09 KINETIC SIMULATIONS OF RECONNECTION AND MAGNETOSPHERIC DISRUPTIONS  
P. L. PRITCHETT, F. V. Coroniti (Solicited)
- 14:20 S10-10 KINETICS OF THREE-DIMENSIONAL MAGNETIC RECONNECTION  
J. BUECHNER
- 14:40 S10-11 PARTICLE-IN-CELL SIMULATIONS OF THREE-DIMENSIONAL MAGNETIC RECONNECTION  
M. HESSE, M. Kuznetsova
- 15:00 S10-12 SIMULATION STUDIES OF VORTEX-INDUCED MAGNETIC RECONNECTION IN A COMPRESSIBLE PLASMA  
Z. Y. PU, X. H. Fang, T. Xu
- 15:20 *Break*
- 15:40 S10-13 RECONNECTION WITHOUT INSTABILITY  
G. BELMONT, L. Rezeau
- 16:00 S10-14 OBSERVATIONS OF LARGE SCALE MAGNETIC RECONNECTION AT THE DAYSIDE MAGNETOPAUSE  
T. Phan, L. Kistler, T. Mukai, M. Fujimoto, L. A. Frank, W. R. Paterson, C. W. Carlson, R. P. Lin, M. Freeman (Solicited)
- 16:20 S10-15 SOLAR FLARES AND MAGNETIC RECONNECTION PROCESSES  
G. S. Choe, C. Z. CHENG (Solicited)
- 16:40 S10-16 COLLISIONLESS TEARING INSTABILITY AS A SUBSTORM TRIGGER AND ITS RELATION TO THIN CURRENT SHEETS  
M. I. Sitnov, A. S. Sharma (Solicited)

**Poster Session**

**Thursday, October 5; Sapporo Media Park**

**9:30-12:30**

- S10-P01** THE MECHANISM OF X-RAY BRIGHT POINTS PRODUCTION  
A. I. PODGORNY, I. M. Podgorny
- S10-P02** MAGNETIC FIELD GENERATION AND SUBSEQUENT FIELD DISSIPATION WITH PLASMA HEATING IN RELATIVISTIC STREAMING PLASMAS  
J. I. Sakai, T. Nakayama, T. Haruki, S. Bulanov
- S10-P03** MAGNETIC FIELD ENERGY DISSIPATION DRIVEN BY RELATIVISTIC PLASMA FLOW  
T. Haruki, J. I. Sakai, D. Sugiyama
- S10-P04** SIMULATION OF DYNAMICS OF CURRENT SHEET PRODUCED DURING TWO CURRENT LOOP COALESCENCE  
S. Saito, J. I. Sakai
- S10-P05** SIMULATION OF THE COLLISION OF MAGNETIC FLUX TUBES IN THE SOLAR PHOTOSPHERE  
K. Furusawa, J. I. Sakai
- S10-P06** DISSIPATION OF MAGNETIC FIELD IN THREE DIMENSIONAL FORCE-FREE CONFIGURATION IN PLASMAS  
H. Mae, J. I. Sakai
- S10-P07** MAGNETIC FIELD ENERGY DISSIPATION DUE TO PARTICLE TRAPPING IN FORCE-FREE CONFIGURATION OF COLLISION-LESS PLASMAS  
D. Sugiyama, J. Sakai, T. Haruki, H. Mae, N. Bobrova, S. Bulanov
- S10-P08** NUMERICAL MAGNETOHYDRODYNAMIC SIMULATIONS OF MAGNETIC RECONNECTION TRIGGERED BY SHOCK WAVE  
S. TANUMA, T. Yokoyama, T. Kudoh, K. Shibata
- S10-P09** THE INFLUENCE OF THE PLASMA ROTATION ON THE STRUCTURE OF MAGNETIC RECONNECTION  
I. Sokolov, S. Bulanov, J. I. Sakai
- S10-P10** NUMERICAL STUDY OF MAGNETIC RECONNECTION PROCESS NEAR INTERPLANETARY CURRENT SHEET  
Wei Fengsi, Hu Qiang, Feng Xueshang
- S10-P11** RECONNECTION IN THE DAYSIDE MAGNETOPAUSE WITH SOUTHWARD AND DAWNWARD IMFS  
K. NISHIKAWA
- S10-P12** RAPID ION-ELECTRON MOMENTUM EXCHANGE VIA KELVIN-HELMHOLTZ INSTABILITY IN THE MAGNETOTAIL CURRENT SHEET  
I. Shinohara, H. Suzuki, M. FUJIMOTO
- S10-P13** THREE-DIMENSIONAL RECONNECTION IN THE MAGNETOTAIL  
M. S. NAKAMURA, M. Fujimoto, H. Matsumoto
- S10-P14** NUMERICAL SIMULATION OF BURSTY BULK FLOWS  
B. P. Pandey, G. S. Lakhina
- S10-P15** SIMULATION OF SUBSTORM: MULTIPLE PLASMOID FORMATION  
MANASHI ROY, B. P. Pandey, G. S. Lakhina
- S10-P16** MULTI-SCALE COMPUTER SIMULATIONS FOR THE STUDY OF MAGNETOTAIL RECONNECTIONS  
T. MURATA, Y. Omura, H. Matsumoto
- S10-P17** MASSIVELY PARALLEL 3D FULL ELECTROMAGNETIC PIC SIMULATIONS GLOBAL RECONNECTIONS AND THEIR GLOBAL CHANGES OF MAGNETIC FIELD TOPOLOGY  
D. S. CAI, Y.-T. Li, T. Ichikawa
- S10-P18** PLASMA ACCELERATION ALONG THE TAIL MAGNETOPAUSE: EVIDENCE FOR THE LOBE RECONNECTION DURING SOUTHWARD IMF PERIODS  
H. HASEGAWA, K. Maezawa, T. Mukai, Y. Saito

**S10**

## **S11: Cross-Scale Coupling: Observations and Theories**

Organizers: L. Zelenyi and H. Kawano

### **Thursday, October 5; Room 5**

Chairperson: L. Zelenyi

- 14:00 S11-01 TOPOLOGICAL PHASE TRANSITIONS AND MULTISCALE SPORADIC LOCALIZED MERGING AND INTERACTIONS IN SPACE PLASMAS  
T. CHANG (Solicited)
- 14:20 S11-02 AURORAL DYNAMICS BASED ON CROSS COUPLING BETWEEN SOLAR WIND, MAGNETOSPHERE AND IONOSPHERE  
T. SATO (Solicited)
- 14:40 S11-03 INTERMITTENCY AND SELF SIMILARITY IN MHD TURBULENCE: WHAT WE HAVE LEARNED FROM SPACE DATA ANALYSIS  
P. VELTRI (Solicited)
- 15:00 S11-04 ELECTRON-ION COUPLING IN HIGH MACH NUMBER SHOCKS: STRONG ELECTRON HEATING AND ACCELERATION  
M. Hoshino, N. Shimada (Solicited)

15:20 Break

Chairperson: H. Kawano

- 15:40 S11-05 WEAK TURBULENCE THEORY OF THE MAGNETOSHEATH FLUCTUATION SPECTRUM  
G. BELMONT, F. Sahraoui, L. Rezeau
- 15:55 S11-06 THE SELF-ORGANIZATION AND RELAXATION INTO THE MINIMUM ENSTROPY STATE OF THE KELVIN-HELMHOLTZ INSTABILITY AT THE MAGNETOPAUSE  
A. MIURA
- 16:10 S11-07 MULTISCALE PROPERTIES OF WAVE-PARTICLE INTERACTIONS IN THE POLAR CUSP  
J. BLECKI
- 16:25 S11-08 MULTIPLE SATELLITE OBSERVATIONS OF HIGH-LATITUDE IONOSPHERIC OUTFLOWS  
J. L. Horwitz, W. Zeng, B. A. Stevenson, X. Wu, G. Germany, P. D. Craven, F. J. Rich, T. E. Moore (Solicited)
- 16:45 S11-09 SUDDEN DISRUPTION OF A THIN CURRENT SHEET  
Z. W. Ma, A. BHATTACHARJEE

### **Friday, October 6; Room 5**

Chairperson: M. Hoshino

- 9:30 S11-10 MULTI-SCALE PHENOMENA IN THE NEAR-EARTH MAGNETOTAIL  
A. T. Y. LUI (Solicited)
- 9:50 S11-11 MULTISCALE RECONNECTION IN THE MAGNETOTAIL  
T. HADA (Solicited)
- 10:10 S11-12 PHASE TRANSITION-LIKE BEHAVIOR OF MAGNETOSPHERIC SUBSTORMS  
A. S. Sharma, M. I. Sitnov, K. Papadopoulos, V. A. Sergeev (Solicited)
- 10:30 S11-13 MULTISCALE COUPLING PROCESSES OF SUBSTORMS  
C. Z. CHENG, A. T. Y. Lui (Solicited)

10:50 Break

Chairperson: A. T. Y. Lui

- 11:10 S11-14 SELF-ORGANIZED MULTISCALE CURRENT SYSTEMS IN THE EARTH'S MAGNETOTAIL  
A. V. MILOVANOV, L. M. Zelenyi, G. Zimbardo, P. Veltri (Solicited)
- 11:30 S11-15 MAGNETOSPHERE-IONOSPHERE COUPLING EFFECTS DURING SUBSTORMS IN THE POLAR MAGNETOSPHERE  
H. KAWANO, G. Le, C. T. Russell, J. Raeder, G. Rostoker, R. Yamaguchi, K. Yumoto, CPMN group
- 11:45 S11-16 TYPICAL SCALES IN AURORAL INVERTED-V'S, STEADY ARCS AND ARC'S FILAMENTS  
Y. I. GALPERIN
- 12:00 S11-17 KINETIC SIMULATIONS OF MULTISCALE TURBULENCE AND STRUCTURE FORMATION IN A PLASMA SHEET  
J. BUECHNER

- 12:15 S11-18 MULTISCALE TURBULENCE PRODUCED BY MHD-KINETIC-SCALE COUPLING IN AN IDEALIZED CURRENT SHEET MODEL  
A. J. Klimas, V. Uritsky, D. Vassiliadis, D. N. Baker

12:30 Lunch

# Poster Session

Thursday, October 5; Sapporo Media Park

9:30-12:30

- S11-P01 MULTISCALE STRUCTURES IN THE SOLAR WIND, FORESHOCK AND MAGNETOSHEATH BY MULTI-SPACECRAFT OBSERVATIONS  
G. Zastenker, L. Zelenyi, P. Dalin, P. Eiges, N. Shevyrev, J. Safrankova, Z. Nemecek, K. Paularena, J. Richardson
- S11-P02 INVESTIGATION OF THE THICKNESS OF THE EARTH'S BOW SHOCK: GEOTAIL HIGH TIME RESOLUTION MGF DATA  
E. Kurihara, T. Nakagawa
- S11-P03 FREQUENCY DOMAIN ANALYSIS OF NONLINEARLY INTERACTING WAVE TURBULENCE IN THE MAGNETOSHEATH WITH TWO-POINT MEASUREMENTS  
I. Bates, M. Balikhin, M. Dunlop, N. Nastasyina-Beloff
- S11-P04 MULTI-SCALE INTERACTIONS OF MAGNETOSHEATH FLOW WITH HIGH LATITUDE MAGNETOPAUSE  
S. Savin, L. Zelenyi, A. Skalsky, Y. Yermolaev, V. Romanov, J. Blecki, N. Maynard, C. T. Russell, J. Safrankova, Z. Nemecek, I. Sandahl, H. Kawano, J. Buchner, B. Nikutowski, P. Veltri, G. Zimbardo
- S11-P05 DUSK PLASMASPHERE OBSERVATIONS IN JULY-OCTOBER 1999: QUIET AND DISTURBED MAGNETIC CONDITIONS  
G. A. KOTOVA, V. V. Bezrukh, M. I. Verigin, L. A. Lezhen, Yu. I. Venedictov
- S11-P06 ON THE STRONG INFLUENCE OF RANDOM HIGH-ENERGY PRECIPITATIONS ON THE PEDERSEN CONDUCTIVITY AND CURRENT SPREADING TO MIDDLE AND LOW LATITUDES  
L. ALPEROVICH, B. Fidel
- S11-P07 A MAGNETOSPHERE-IONOSPHERE COUPLING MODEL FOR SUBSTORM GENERATION  
W. LYATSKY, A. M. Hamza
- S11-P08 INTERMITTENCY AND WAVE COUPLING IN MAGNETOSPHERIC TAIL CURRENT DISRUPTION  
G. CONSOLINI, A. T. Y. Lui
- S11-P09 COMPLEXITY, CRITICALITY, AND FUNCTIONAL ORDER IN SUBSTORM DYNAMICS  
G. CONSOLINI
- S11-P10 EVIDENCE FOR A SOLAR WIND ORIGIN OF THE POWER LAW BURST DISTRIBUTION OF THE AE INDICES  
M. P. Freeman, N. W. Watkins, D. J. Riley
- S11-P11 SELF-ORGANIZED CRITICAL TURBULENCE IN THE MAGNETOTAIL AS A FACTOR CONTROLLING THE SOLAR WIND-MAGNETOSPHERE COUPLING  
V. Uritsky, A. Klimas, D. Vassiliadis
- S11-P12 STATISTICAL STUDY OF GEOMAGNETIC DISTURBANCES: POWER LAW AND THE SOC MODEL  
Y. Watanabe, H. Shirai
- S11-P13 COUPLING OF THE LARGE-SCALE CURRENT SHEET SPATIAL STRUCTURE TO THE FINE SCALE STRUCTURE OF THE PHASE SPACE  
L. M. ZELENYI, H. V. Malova, V. Yu. Popov, A. A. Bykov
- S11-P14 SCALING FEATURES OF VLF CHORUS OBSERVED BY MAGION-5  
B. V. KOZELOV, E. Titova, V. Y. Trakhtengerts, F. Jiricek, P. Triska
- S11-P15 PARAMETRIC INSTABILITIES OF LANGMUIR WAVES IN THE PRESENCE OF EXTERNAL DENSITY FLUCTUATIONS  
A. Volokitin, V. KRASNOSELSKIKH
- S11-P16 NEAR-EARTH CURRENT MEANDER [NECM] MODEL OF SUBSTORMS  
W. J. Heikkila, Tao Chen

S11

## **S12: ULF and VLF Waves in the Magnetosphere**

Organizers: R. Horne and K. Yumoto

**Thursday, October 5; Royton Hall**

- 14:00 S12-01 CUSP LATITUDE TRANSIENT PULSATIONS: SOLAR WIND CORRELATIONS AND DIURNAL PATTERNS  
S. T. Ables, B. J. FRASER, P. V. Ponomarenko, R. J. Morris
- 14:20 S12-02 CHARACTERISTICS OF Pc 3 AND Pc 5 WAVES OBSERVED BY THE AGO NETWORK AT SOUTHERN HIGH LATITUDES  
H. Fukunishi, R. Kataoka, A. Shono, L. J. Lanzerotti
- 14:40 S12-03 COORDINATED SUPERDARN AND GEOTAIL OBSERVATIONS OF Pc 3 PULSATIONS  
H. MATSUOKA, A. S. Yukimatsu, H. Yamagishi, N. Sato, G. J. Sofko, M. Lester
- 15:00 S12-25 SPACE-GROUND COORDINATED OBSERVATIONS OF Pc 5 WAVES  
Y. TONEGAWA, T. Sakurai, N. Sato, S. Kokubun, K. Yumoto
- 15:20 Break
- 15:40 S12-05 POSSIBLE SCENARIO OF HIGH-LATITUDE Pi 2 PULSATION EXCITATION  
S. I. SOLOVYEV, D. G. Baishev, E. S. Barkova, K. Yumoto
- 16:00 S12-06 TRANSIENT BEHAVIOR OF THE MHD WAVES BASED ON THE CURRENT WEDGE MODEL: A MODEL OF THE Pi 2 PULSATION  
S. FUJITA, M. Itonaga, A. Yoshikawa, T. Mizuta, H. Nakata
- 16:20 S12-07 PLASMASPHERIC DYNAMICS EXPLORED BY GROUND OBSERVATIONS OF ULF AND VLF WAVES  
P. J. Chi, C. T. Russell, D. L. Carpenter
- 16:40 S12-08 THE WAVE CHARACTERISTICS OF THE GLOBAL COHERENT Pc 3 PULSATIONS  
Y.-M. TANAKA, K. Yumoto, A. Yoshikawa, T.-I. Kitamura, B. J. Fraser, S. I. Solov'yev, E. F. Vershinin

**Friday, October 6; Room 6**

- 9:30 S12-09 MAGNETOSPHERIC DIAGNOSTICS USING ULF WAVES  
F. W. MENK (Solicited)
- 9:50 S12-10 DIAGNOSTICS OF SOLAR WIND-MAGNETOSPHERE INTERACTIONS USING GROUND-BASED OBSERVATIONS OF BROADBAND ULF WAVES AT HIGH LATITUDES  
M. J. Engebretson (Solicited)
- 10:10 S12-11 IONOSPHERIC EFFECTS ON ULF WAVES  
P. NENOVSKI (Solicited)
- 10:30 S12-12 GROUND IMAGE OF WAVE PROCESSES IN A DISTANT MAGNETOSPHERE DUE TO THE MHD MODE CONVERSION  
V. PILIPENKO (Solicited)
- 10:50 Break
- 11:10 S12-13 DIAGNOSING THE EXCITATION MECHANISMS OF Pc 5 ULF MAGNETOSPHERIC WAVEGUIDE MODES AND FLRS  
I. R. MANN, R. A. Mathie (Solicited)
- 11:30 S12-14 ELECTROMAGNETIC ION CYCLOTRON WAVES IN THE EARTH'S MAGNETOSPHERE: ARE THEY BOUNCING WAVE-PACKETS?  
B. J. FRASER, K. R. Carney, J. V. Olson (Solicited)
- 11:50 S12-15 HIGH RESOLUTION OBSERVATIONS OF ULF WAVES IN THE IONOSPHERE USING THE DOPE HF DOPPLER SOUNDER  
D. M. Wright, T. K. Yeoman

- 12:10 S12-16 TRANSPORT AND ACCELERATION OF RADIATION BELT ELECTRONS THROUGH RESONANT INTERACTION WITH MAGNETOSPHERIC ULF OSCILLATIONS  
S. R. ELKINGTON, M. K. Hudson, A. A. Chan (Solicited)
- 12:30 Lunch
- 14:00 S12-17 PLASMA WAVES NEAR EARTH'S BOW SHOCK AND THEIR IMPLICATION  
H. KOJIMA, H. Matsumoto (Solicited)
- 14:20 S12-18 DEVELOPMENT OF TURBULENCE DURING MAGNETIC RECONNECTION AT THE MAGNETOPAUSE  
B. N. Rogers, J. F. DRAKE, M. A. Shay, M. Swisdak (Solicited)
- 14:40 S12-19 VLF WAVE SCATTERING AND DIFFUSE AURORAL PRECIPITATION  
R. M. THORNE (Solicited)
- 15:00 S12-20 A THEORY OF DISCRETE VLF EMISSIONS IN THE MAGNETOSPHERE  
V. Y. TRAKHTENGERTS (Solicited)
- 15:20 Break
- 15:40 S12-21 SUBSTORM CHORUS EVENTS: WHAT ARE THEY AND WHAT CAN THEY TELL US?  
A. J. SMITH, M. P. Freeman, G. D. Reeves (Solicited)
- 16:00 S12-22 PROPERTIES OF MAGNETOSPHERIC LINE RADIATION  
C. J. RODGER (Solicited)
- 16:20 S12-23 VLF WAVE PHENOMENA IN THE INNER MAGNETOSPHERE OBSERVED ON MAGION-4 AND MAGION-5 SATELLITES  
F. Jiricek, P. Triska, D. R. Shklyar
- 16:40 S12-24 A STATISTICAL SURVEY OF ELF/VLF WAVES OBSERVED BY AKEBONO  
Y. Kasahara, Y. Akimoto, R. Niitsu, I. Kimura

### Poster Session

Thursday, October 5; Sapporo Media Park

9:30-12:30

- S12-P01 MODIFIED MAXIMUM ENTROPY METHOD APPLIED TO Pc 3 MAGNETIC PULSATIONS AT LOW LATITUDE  
Y. HIGUCHI
- S12-P02 STORM TIME LONG PERIOD (Pc 5-6) GEOMAGNETIC PULSATIONS UNDER STRONG SOLAR WIND DYNAMIC PRESSURE AND STRONG IMF MAGNETIC PRESSURE  
N. G. Kleimenova, O. V. Kozyreva, J.-J. Schott, M. Bitterly, P. K. Ivanova
- S12-P03 OBSERVATIONS OF Pi 2 PULSATIONS IN MID-LATITUDES  
R. A. Rakhmatulin, K. Hayashi, A. Yu. Pashinin
- S12-P04 ELECTROMAGNETIC ION CYCLOTRON WAVES IN THE MAGNETOSPHERE-IONOSPHERE  
J. R. Johnson, C. Z. CHENG
- S12-P05 CHARACTERISTIC RESULTS FROM STORM-TIME Pc 5 PULSATIONS  
B. R. Arora, D. R. K. RAO, N. B. Trivedi
- S12-P06 MODULATION OF RADIO WAVES AT LOCAL FIELD LINE RESONANCE FREQUENCIES  
A. K. Sinha, B. M. Pathan, R. Rajaram
- S12-P07 ON THE POLARIZATION STRUCTURE OF MID-LATITUDE Pc 3-4 PULSATIONS DERIVED FROM THEIR ELECTRIC FIELD SIGNATURE  
D. Danov, P. Nenovski, J. Vero, B. ZIEGER
- S12-P08 ENERGETICS OF ULF WAVES IN THE MAGNETO- AND IONO-SPHERES  
T. SAKURAI, Y. Tonegawa, Y. Shinkai, K. Yumoto, S. Kokubun, K. Tsuruda, T. Mukai
- S12-P09 IONOSPHERIC OBSERVATIONS OF Pc 5 WAVES GENERATED AT THE INNER EDGE OF THE LOW LATITUDE BOUNDARY LAYER  
C. R. CLAUER, Valery G. Petrov, V. Suchdeo



- S12-P10 COMPARISON OF AURORAL LUMINOSITY VARIATION AND MULTIPLE Pi 2 PULSATIONS AT A SUBSTORM ONSET USING 1-SEC RESOLUTION GROUND-BASED DATA  
K. Shiokawa, K. Yumoto
- S12-P11 CHARACTERISTICS OF ULF WAVES AT DIFFERENT LOCAL TIMES  
G. GUSTAFSSON, K. Stasiewicz
- S12-P12 Pc 1 WAVES AND IONOSPHERIC ALFVEN RESONATOR: GENERATION OR FILTRATION  
A. G. Demekhov, V. Y. TRAKHTENGERTS, T. Bosinger
- S12-P13 STANDING WAVE STRUCTURE AND SUBSTORM LOCAL DIPOLARIZATION OBSERVED BY CRRES  
T. V. KOZELOVA, B. V. Kozelov, L. L. Lazutin
- S12-P14 Pc 1 PROPAGATION CHARACTERISTICS DERIVED FROM TWO-STATION OBSERVATIONS  
A. Potapov, T. Polyushkina, A. Guglielmi, K. HAYASHI
- S12-P15 PROTON PRECIPITATION RELATED TO Pc 1 PULSATIONS  
T. A. Yahnina, A. G. YAHNIN, J. Kangas, J. Manninen
- S12-P16 AUTOMATIC DETECTION OF Pi 2 EVENTS AND THE ONSET TIME BY USING WAVELET TRANSFORM  
Y. TONEGAWA, K. Tsunetzawa, K. Sakata, T. Sakurai
- S12-P17 OCCURRENCE OF ULF WAVES IN THE NEAR-EARTH MAGNETOSPHERE: POLAR EFI OBSERVATIONS  
H. LAAKSO
- S12-P18 NUMERICAL RESULTS FOR AN ALFVEN SWEEP-MASER MODEL OF Pc 1 PEARLS  
A. G. Demekhov, S. V. Isaev, V. Y. TRAKHTENGERTS
- S12-P19 GROUND MAGNETIC PERTURBATIONS ASSOCIATED WITH THE STANDING ALFVEN OSCILLATION IN THE MAGNETOSPHERE-IONOSPHERE SYSTEM  
H. NAKATA, S. Fujita, A. Yoshikawa, M. Itonaga, K. Yumoto
- S12-P20 SOURCES OF Pc 3 ENERGY AT HIGH LATITUDES  
P. V. PONOMARENKO, B. J. Fraser, F. W. Menk, S. T. Ables, R. J. Morris
- S12-P21 THE GENERATION AND PROPAGATION OF Pc 3-4 (10-50 mHz) WAVES IN THE HIGH LATITUDE MAGNETOSPHERE  
T. A. Howard, F. W. MENK
- S12-P22 HF RADAR OBSERVATIONS OF ULF WAVES NEAR THE PLASMAPAUSE  
F. W. MENK, C. L. Waters, B. J. Fraser, M. L. Parkinson, P. L. Dyson
- S12-P23 ONE DIMENSIONAL MODEL FOR ULF WAVE PROPAGATION IN THE IONOSPHERE  
M. D. SCIFFER, C. L. Waters
- S12-P24 HF DOPPLER OSCILLATIONS DUE TO MIXED ULF WAVE MODES  
M. D. SCIFFER, C. L. Waters, F. W. Menk, I. Dunlop
- S12-P25 EFFECT OF 2D SPATIAL INTEGRATION ON Pc 5 ULF AZIMUTHAL WAVENUMBERS OBSERVED ON THE GROUND  
P. V. PONOMARENKO, C. L. Waters, M. D. Sciffer, B. J. Fraser, J. C. Samson
- S12-P26 ROLE OF IONOSPHERIC HALL EFFECT ON THE ENERGY BALANCE IN THE MAGNETOSPHERE-IONOSPHERE COUPLED SYSTEM  
A. YOSHIKAWA, R. Fujii, T. Iijima, M. Itonaga, K. Yumoto
- S12-P27 Pi 2 SOURCE REGION DEDUCED FROM THE CPMN DATA  
T. Uozumi, K. Yumoto, H. Kawano, A. Yoshikawa, J. V. Olson, S.-I. Akasofu, S. I. Solov'yev, E. F. Vershinin, S. Ohtani, K. Liou, C.-I. Meng
- S12-P28 RELATIONSHIP BETWEEN LOW-LATITUDE Pi 2 PULSATIONS AND MAGNETOSPHERIC SUBSTORM ONSETS  
K. YUMOTO, R. Yamaguchi, H. Kawano, the CPMN group
- S12-P29 EFFECT OF LOW LATITUDE IONOSPHERE ON ULF WAVES  
MANASHI ROY, D. R. K. Rao
- S12-P30 CHARACTERISTIC OF GLOBAL Pc 1 ACTIVITIES AFTER MAGNETIC STORMS  
K. Hayashi, A. Potapov, O. A. Pokhatelov, J. Kangas, J. V. Olson

- S12-P31 EFFECTS OF THE IONOSPHERIC CONDITIONS ON THE ULF PULSATIONS OBSERVED AT GEOMAGNETIC CONJUGATE PAIR STATIONS  
Y. OBANA, A. Yoshikawa, K. Yumoto, J. V. Olson, R. J. Morris
- S12-P32 PLASMA AND MAGNETIC FIELD EVOLUTION NEAR GEOSYNCHRONOUS ORBIT IN THE MIDNIGHT SECTOR AT AURORAL BREAKUP  
D. KOGA, O. Saka, T. Hada
- S12-P33 REGULARITIES OF AURORAL STREAMER FORMATION AND THEIR RELATIONSHIP TO IMPULSIVE MAGNETIC FIELD VARIATIONS  
D. G. BAISHEV, S. I. Solovyev, E. S. Barkova, K. Yumoto, K. Shiokawa
- S12-P34 STATISTICAL STUDY OF GLOBAL CONCURRENT OCCURRENCE OF  $\Pi 2$  PULSATIONS IN THE EQUATORIAL REGION  
M. SHINOHARA, K. Yumoto, H. Tachihara, T.-I. Kitamura, Equatorial Magnetometer Network Observation Group
- S12-P35 IONOSPHERIC CONVECTION ASSOCIATED WITH THE LONG-PERIOD GEOMAGNETIC PULSATION  
T. Motoba, T. Kikuchi
- S12-P36 GEOMAGNETIC MICROPULSATION MEASUREMENTS AT THE FERRAZ BRAZILIAN ANTARCTIC STATION  
J. M. DA COSTA, S. L. G. Dutra, N. B. Trivedi, A. Zanandrea, H. R. G. Lopes
- S12-P37 PROTON AND ELECTRON HEATING BY RADIALLY PROPAGATING FAST MAGNETOSONIC WAVES  
R. B. Horne, G. V. Wheeler, H. St. C. K. Alleyne
- S12-P38 ELECTRON PITCH ANGLE DIFFUSION AND THE FORMATION OF PANCAKE DISTRIBUTIONS  
R. B. Horne, R. M. Thorne, N. P. Meredith, R. R. Anderson
- S12-P39 SELF-CONSISTENT APPROACH TO TRIGGERED VLF EMISSIONS: PHASE AND NONLINEAR EFFECTS  
V. Y. TRAKHTENGERTS, A. G. Demekhov, Y. Hobara, M. Hayakawa
- S12-P40 THE SHORT PERIODIC MAGNETOSPHERIC VLF EMISSIONS  
P. A. BESPALOV
- S12-P41 GENERATION OF ALFVENIC TURBULENCE BY BROADBAND PLASMA WAVES  
S. Singh, G. S. Lakhina
- S12-P42 GEOTAIL OBSERVATION OF CHORUS EMISSIONS IN THE MAGNETOSPHERE  
S. YAGITANI, I. Nagano, H. Matsumoto, Y. Omura, T. Mukai
- S12-P43 WHISTLER OBSERVATIONS AT GREAT WALL STATION: ACTIVITIES WITH GEOMAGNETIC STORMS  
PENG Feng-Lin, Chen Hong-Fei, Tang Keyun, Hong Minghua
- S12-P44 STUDY ON ELECTROSTATIC WAVES NEAR THE LOWER-HYBRID FREQUENCY IN THE LOBE REGION OF EARTH'S MAGNETOTAIL OBSERVED BY GEOTAIL  
K. Shin, K. Hashimoto, Y. Omura, H. Kojima, T. Okada, H. Matsumoto, R. R. Anderson, K. Tsuruda, T. Mukai
- S12-P45 FULL WAVE ANALYSIS OF MULTI-SITE VLF OBSERVATIONS IN ANTARCTICA  
I. NAGANO, S. Yagitani, A. J. Smith, M. A. Clilverd
- S12-P46 MAGNETOSPHERIC LION ROARS  
W. Baumjohann, E. Georgescu, R. A. Treumann

## **S13: Aurora Dynamics and Plasma Wave Emissions**

Organizers: K. Stasiewicz and H. Kojima

**Tuesday, October 3; Room 4**

- 9:30 S13-01 PARALLEL ELECTRIC FIELDS IN DISCRETE ARCS  
R. E. Ergun, C. W. Carlson, J. P. McFadden, F. S. Mozer, R. J. Strangeway (Solicited)
- 9:50 S13-02 SOLITARY WAVES AT HIGH AND LOW ALTITUDES ON AURORAL AND CUSP FIELD LINES  
C. CATTELL, J. Dombeck, J. Crumley, C. Kletzing, W. Peterson (Solicited)
- 10:10 S13-03 PARTICLE AND FIELD OBSERVATIONS IN THE SOURCE REGION OF AURORAL KILOMETRIC RADIATION: IMPLICATIONS FOR GENERATION MECHANISMS  
R. J. STRANGEWAY, R. E. Ergun, P. L. Pritchett (Solicited)
- 10:30 S13-04 AURORAL PLASMA TURBULENCE AND THE CAUSE OF AKR FINE STRUCTURE  
R. POTTELETTE, R. Treumann, M. Berthomier (Solicited)
- 10:50 Break
- 11:10 S13-05 ON MODELS FOR THE FINE STRUCTURES OF BROADBAND PLASMA WAVES OBSERVED ON THE AURORAL FIELD LINES  
G. S. LAKHINA (Solicited)
- 11:30 S13-06 AKR RELATED EMISSIONS  
K. HASHIMOTO, H. Matsumoto, R. R. Anderson, J.-L. Burgeret, M. L. Kaiser (Solicited)
- 11:50 S13-07 WEAKLY RELATIVISTIC PLASMA CAVITY AS A SOURCE OF AURORAL KILOMETRIC RADIATION  
A. Rukhadze, V. KRASNOSELSKIKH
- 12:10 S13-08 GENERATION OF AURORAL KILOMETRIC RADIATION BY ELECTRON HORSESHOE DISTRIBUTIONS  
R. Bingham, R. A. Cairns, J. M. Dawson, J. Tonge
- 12:30 Lunch
- 14:00 S13-09 ELECTRON BEAM INSTABILITIES IN A NONUNIFORM SYSTEM: GENERATION OF LANGMUIR WAVES AND SOLITARY WAVES  
Y. OMURA, T. Umeda, H. Usui, H. Matsumoto (Solicited)
- 14:20 S13-10 POLAR S/C OBSERVATIONS OF INTENSE ELECTRIC FIELDS AND ALFVENIC POYNTING FLUX IN THE PLASMA SHEET AT 4-6 RE ALTITUDES: RELATION TO AURORAL PARTICLE ACCELERATION  
J. WYGANT, A. Keiling, C. A. Cattell, R. Lysak, M. Temerin, F. S. Mozer, C. Kletzing, J. Scudder, G. Parks, M. Brittnacher, J. Spann, C. T. Russell, W. Peterson, L. Lotko, A. Streltsov (Solicited)
- 14:40 S13-11 SOURCE AND RELEASE OF ENERGY IN AURORAL PARTICLE ACCELERATION  
Y. SONG, R. L. Lysak
- 15:00 S13-12 GEOTAIL, POLAR, AND WAVE ISTP IN SITU AND REMOTE OBSERVATIONS OF AURORAL PLASMA AND RADIO WAVE EMISSIONS RELATED TO STORMS AND SUBSTORMS  
R. R. ANDERSON, H. Matsumoto, K. Hashimoto, H. Kojima, Y. Kasaba, M. L. Kaiser, J.-L. Bougeret, J.-L. Steinberg, I. Nagano, S. Yagitani, H. Takano, T. Murata
- 15:20 Break
- 15:40 S13-13 CONNECTION BETWEEN AURORAL AND PLASMA SHEET DYNAMICS  
G. K. Parks, M. Brittnacher, L. J. Chen, M. Fillingim, M. McCarthy (Solicited)
- 16:00 S13-14 AKEBONO OBSERVATION OF AURORAL ENERGIZATION PRECESSES OF IONOSPHERIC PARTICLES  
W. MIYAKE, T. Mukai (Solicited)
- 16:20 S13-15 REMOTE ANALYSIS OF DAYSIDE ION HEATING PROCESSES USING CONJUGATE SATELLITE AND RADAR MEASUREMENTS  
N. DUBOULOZ, M. Bouhram, M. Malingre, C. Senior, R. Pottellette, D. Delcourt, C. W. Carlson, I. Roth, J.-A. Sauvaud (Solicited)
- 16:40 S13-16 THE DYNAMIC CUSP AURORA AND ASSOCIATED PLASMA CONVECTION/ MAGNETIC ACTIVITY: RESPONSES TO NORTHWARD AND SOUTHWARD TURNINGS OF THE IMF  
P. E. SANDHOLT (Solicited)

## Poster Session

Wednesday, October 4; Sapporo Media Park

8:30 - 12:00

- S13-P01 ELECTROSTATIC ION CYCLOTRON WAVES IN A MULTI-COMPONENT AURORAL PLASMA  
R. V. REDDY, G. S. Lakhina
- S13-P02 GENERATION AND PROPAGATION OF CYCLOTRON MASER EMISSIONS IN THE AKR SOURCE CAVITY  
P. L. PRITCHETT, R. J. Strangeway, R. E. Ergun, C. J. Carlson, J. P. McFadden, G. T. Delory
- S13-P03 BGK ELECTRON HOLES AND FIELD-ALIGNED CURRENTS  
LI-JEN CHEN, G. Parks
- S13-P04 UNDERSTANDING PARALLEL ELECTRIC FIELDS AND WAVE-PARTICLE INTERACTIONS IN THE AURORAL ZONE USING SIMULATIONS AND FAST/POLAR OBSERVATIONS  
D. SCHRIVER, R. Richard, M. Ashour-Abdalla, R. J. Strangeway
- S13-P05 AURORAL ALFVENIC SHOCKS IN THE IONOSPHERE-MAGNETOSPHERE COPLING: MULTI-SCALE WAVE STRUCTURES  
E. V. MISHIN
- S13-P06 DISCRETE ELECTROSTATIC EIGENMODES ASSOCIATED WITH IONOSPHERIC DENSITY STRUCTURE  
P. H. Yoon, A. T. Weatherwax, J. LaBelle
- S13-P07 OBSERVATIONS OF IONOSPHERIC MF/HF RADIO EMISSION FROM SPACE  
S. D. Bale
- S13-P08 INTERPLANETARY RAM PRESSURE INCREASES/DECREASES AND DAYSIDE AURORAL VARIATIONS  
X.-Y. Zhou, B. T. Tsurutani
- S13-P09 SPECTRAL ANALYSIS OF FLICKERING AURORA OBSERVED AT SYOWA STATION  
K. SAKANOI, H. FUKUNISHI
- S13-P10 THE CURRENT VOLTAGE RELATIONSHIP IN TIME-VARYING POTENTIAL STRUCTURES  
M. Morooka, T. Mukai, A. Matsuoka, H. Fukunishi, S. Machida, T. Nagatsuma
- S13-P11 ENERGY SEPARATION EVENT OBSERVED WITH ALL-SKY IMAGER AT SOUTH POLE STATION  
M. Okada, M. Ejiri, M. Taguchi, S. Okano
- S13-P12 PLASMA WAVES IN THE RELATION TO HEATING HEAVY IONS IN THE POLAR CUSP REGION: ROCKET EXPERIMENT  
Y. Ueda, H. Kojima, H. Matsumoto, K. Hashimoto, I. Nagano, T. Okada, T. Mukai
- S13-P13 MOLECULAR ION OUTFLOW IN THE TOPSIDE POLAR IONOSPHERE  
M. YAMADA, S. Watanabe, T. Abe, E. Sagawa, A. W. Yau
- S13-P14 PARTICLE SIMULATIONS OF ELECTROSTATIC SOLITARY WAVES IN THE AURORAL REGION  
T. MIYAKE, Y. Omura, H. Matsumoto
- S13-P15 COORDINATED AKEBONO AND EISCAT OBSERVATIONS OF SUPRATHERMAL ION OUTFLOWS IN THE NIGHTSIDE AURORAL OVAL REGION  
N. YOSHIDA, S. Watanabe, H. Fukunishi, Akebono Science Group, Japanese EISCAT Science Group
- S13-P16 HYDROGEN AURORA (H ALPHA) REGION AND EASTWARD ELECTROJET CURRENT REGION DURING THE INITIAL PHASE OF THE MAGNETIC STORM ON FEBRUARY 18, 1999  
Y. Nogawa, K. Hayashi
- S13-P17 CONTROL MECHANISM OF SEASONAL VARIATION OF AURORAL KILOMETRIC RADIATION  
A. KUMAMOTO, M. Iizima, T. Ono, H. Oya
- S13-P18 LOW FREQUENCY CONTINUUM RADIATION OBSERVED BY GEOTAIL IN THE MAGNETOTAIL  
H. Takano, I. Nagano, S. Yagitani, M. Fukuoka, K. Hashimoto, H. Matsumoto, R. R. Anderson
- S13-P19 PLASMA-MASER INSTABILITY OF EM RADIATION IN PRESENCE OF LH TURBULENCE  
B. Saikia, M. Nambu
- S13-P20 BROADBAND HF WAVES EXCITED IN THE POLAR CUSP AT THE IONOSPHERIC ALTITUDES DURING STRONG GEOMAGNETIC STORM  
H. Rothkaehl, J. Blecki, K. Stasiewicz
- S13-P21 OPTICAL AND PARTICLE SIGNATURES OF MAGNETOSPHERIC BOUNDARY LAYERS NEAR MAGNETIC NOON: SATELLITE AND GROUND-BASED OBSERVATIONS  
K. OKSAVIK, F. Soraas, J. Moen, W. J. Burke

S13

- S13-P22 OBSERVATIONS SUPPORTING AN O-SHAPED POTENTIAL MODEL AND A SELF-CONSISTENT MECHANISM FOR ITS FORMATION  
P. JANHUNEN, A. Olsson
- S13-P23 RELATIONS BETWEEN LOWER HYBRID CAVITIES AND MAGNETOSONIC WAVES OBSERVED BY THE FREJA SATELLITE  
S. H. HOYMORK, H. L. Pecseli, B. Lybekk, J. Trulsen, A. Eriksson
- S13-P24 ULF ACTIVITY IN THE AURORAL OVAL AS OBSERVED BY THE MICROSATELLITE ASTRID-2 AND THE GREENLAND MAGNETOMETER CHAIN  
V. PILIPENKO, N. Ivchenko, T. Neubert, G. Marklund, L. Blomberg, F. Primdahl
- S13-P25 A NEW INTERPRETATION OF LOW-FREQUENCY TURBULENCE IN AURORAL REGIONS  
K. STASIEWICZ, Y. Khotyaintsev, G. Gustafsson
- S13-P26 STUDY OF NONLINEAR DYNAMICS OF AURORA BY TV DATA  
B. V. KOZELOV, N. Y. Vjalkova
- S13-P27 CHARGED PARTICLE FLUXES IN REGION WITH TURBULENT ELECTROSTATIC SOLITARY STRUCTURES IN AURORAL PLASMA  
P. A. BESPALOV, V. G. Misonova

## S14: Wave-Particle Interactions at Shocks and Boundary Layers

Organizers: B. Lembege and T. Hada

Monday, October 2; Room 5

S14

- 9:30 S14-01 POLAR CAP BOUNDARY LAYER WAVES: LOCATION, INTERPLANETARY DEPENDENCE AND NATURE  
B. T. TSURUTANI, J. K. Arballo, C. Galvan, L. D. Zhang, T. Hada, G. S. Lakhina (Solicited)
- 9:50 S14-02 NONLINEAR ELECTROSTATIC TURBULENCE AT THE BOW SHOCK  
S. D. Bale, A. Hull, D. E. Larson, R. P. Lin, J. Kellogg, K. Goetz, S. J. Monson (Solicited)
- 10:10 S14-03 TURBULENCE ANALYSIS THROUGH BOUNDARY LAYERS  
T. DUDOK DE WIT (Solicited)
- 10:30 S14-04 FORESHOCK PROCESSES AND THEIR RELATIONSHIP TO MAGNETOPAUSE MOTION  
D. G. SIBECK (Solicited)
- 10:50 Break
- 11:10 S14-05 REVIEW OF RECENT RESULTS ON WAVES IN THE ELECTRON FORESHOCK  
IVER H. CAIRNS, P. A. Robinson (Solicited)
- 11:30 S14-06 PROPERTIES OF MASS-LOADING BOUNDARIES AT COMETS AND MARS  
C. MAZELLE (Solicited)
- 11:50 S14-07 KINETIC SIMULATION OF THIN CURRENT SHEET BOUNDARIES  
J. BUECHNER (Solicited)
- 12:10 S14-08 IDENTIFYING NONLINEAR PROCESSES BY HIGHER-ORDER STATISTICAL TESTS  
A. MASSON, F. Lefevre, B. B. Shishkov
- 12:25 S14-09 TWO-DIMENSIONAL HYBRID SIMULATIONS OF THE MARTIAN DAYSIDE  
G. CHANTEUR
- 12:40 Lunch
- 14:00 S14-10 COMPUTER SIMULATION OF WAVE AND ELECTRON DYNAMICS RELATED TO THE BOW SHOCK  
H. MATSUMOTO, H. Kojima (Solicited)
- 14:20 S14-11 GENERATION OF PLASMA OSCILLATIONS AND HARMONICS: SIMULATIONS AND OBSERVATIONS  
M. ASHOUR-ABDALLA, D. Schriver (Solicited)
- 14:40 S14-12 EVIDENCE OF COSMIC RAY MODIFIED-INTERPLANETARY SHOCKS  
T. Terasawa, H. Noda (Solicited)
- 15:00 S14-13 SLOW MODE SHOCKS IN THE EARTH'S MAGNETOTAIL  
Y. SAITO, T. Mukai, A. Nishida, T. Terasawa, S. Machida, S. Kokubun (Solicited)
- 15:20 Break
- 15:40 S14-14 KINETIC EFFECTS DURING MAGNETOPAUSE RECONNECTION  
M. SCHOLER (Solicited)
- 16:00 S14-15 INHERENT RELATIONSHIP BETWEEN RECONNECTION AND ENHANCEMENT OF WAVE ACTIVITY: GEOTAIL OBSERVATIONS  
X. H. DENG, H. Matsumoto, H. Kojima
- 16:15 S14-16 THE STRUCTURE OF DAYSIDE MAGNETIC RECONNECTION LAYER  
M. S. NAKAMURA, M. Fujimoto, M. Scholer, H. Matsumoto
- 16:30 S14-17 SHOCK SEGMENTS OF INTERMEDIATE TYPE IN 3D MHD BOW SHOCK FLOWS WITH MULTIPLE INTERACTING SHOCK FRONTS  
H. DE STERCK, S. Poedts

- 16:45 S14-18 DOUBLE DISCONTINUITIES IN SPACE PLASMAS  
Y. C. WHANG
- 17:00 S14-19 WAVES AND PARTICLES AT COLLISIONLESS SHOCK FRONTS  
J. L. BOUGERET, S. Bale

#### Poster Session

**Wednesday, October 4; Sapporo Media Park**

8:30 - 12:00

- S14-P01 KINETIC THEORY OF ELECTROSTATIC TURBULENCE IN COLLISIONLESS SHOCKS AND BOUNDARY LAYERS  
P. H. YOON
- S14-P02 MAGNETOSHEATH STRUCTURE ASSOCIATED WITH THE INTERACTION OF THE IMF ROTATION WITH A BOW SHOCK: NUMERICAL STUDY  
K. TSUBOUCHI, T. Terasawa
- S14-P03 MHD WAVE ACTIVITY AND PARTICLE TRANSPORT AT THE MAGNETOPAUSE  
J. R. Johnson, C. Z. CHENG
- S14-P04 SELF-CONSISTENT ELECTRON DISTRIBUTIONS IN THE 2-D FORESHOCK REGION  
B. LEMBEGE, P. Savoini
- S14-P05 QUICK ION INJECTION AND ACCELERATION IN QUASI-PARALLEL SHOCKS  
T. Sugiyama, M. Fujimoto
- S14-P06 LONG TIME EVOLUTION OF ELECTROMAGNETIC WAVES DRIVEN BY THE RELATIVISTIC RING DISTRIBUTION  
S. MATSUKIYO, T. Hada
- S14-P07 ACCELERATION OF CHARGED PARTICLES BY LARGE AMPLITUDE MHD WAVES: NON-MARKOV MODEL  
Y. KURAMITSU, T. Hada
- S14-P08 CROSS FIELD TRANSPORT OF COSMIC RAYS: TEST PARTICLE SIMULATION STUDIES  
F. OTSUKA, T. Hada
- S14-P09 ON NONSTATIONARITY OF SUPER-CRITICAL PERPENDICULAR SHOCKS  
T. Hada, B. Lembege, P. Savoini

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Taxis are readily available on almost every street corner and can certainly be found at every major hotel and train station. You can catch a taxi on the street by merely raising your hand. Taxi fares begin at 600 yen in Sapporo, and tipping is not necessary. One should also remember that taxi doors open and close by remote control.  
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## **S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena**

Organizers: D. Schriver and M. Fujimoto

### **Thursday, October 5; Room 4**

- 14:00 S15-01 THE PHYSICS OF COLLISIONLESS MAGNETIC RECONNECTION  
J. F. DRAKE, B. N. Rogers, M. A. Shay (Solicited)
- 14:30 S15-02 MICRO AND MACRO SCALE PHENOMENA DURING MAGNETOTAIL RECONNECTION: RESULTS FROM HYBRID SIMULATIONS  
M. SCHOLER, K. Arzner (Solicited)
- 15:00 S15-03 UNSTABLE ION ACOUSTIC WAVES AS A SOURCE OF ANOMALOUS RESISTIVITY IN A COLLISIONLESS PLASMA  
C. E. J. WATT, R. B. Horne, M. P. Freeman
- 15:20 Break
- 15:40 S15-04 KINETIC THEORY OF MIRROR MODE TURBULENCE AS A BASIC PHASE TRANSITION IN HIGH-BETA PLASMA  
R. A. TREUMANN (Solicited)
- 16:10 S15-05 A STATISTICAL THEORY ON PRESSURE ANISOTROPY RELAXATION  
T. K. NAKAMURA
- 16:30 S15-06 PLASMA TURBULENCE IN THE NEAR-EARTH PLASMA SHEET: ITS CAUSES AND CONSEQUENCES  
D. W. SWIFT (Solicited)

**S15**

### **Friday, October 6; Room 5**

- 14:00 S15-07 ROLE OF KINETIC THEORY AND SIMULATIONS IN MICRO AND MESO SCALE PLASMA TRANSPORT PHENOMENA  
S. B. GANGULI, V. V. Gavrishchaka (Solicited)
- 14:30 S15-08 DYNAMIC FLUID-KINETIC (DYFK) MODELING OF THE AURORAL IONOSPHERIC PLASMA TRANSPORT FROM 120 KM TO 4 RE ALTITUDE  
J. L. HORWITZ, X. Wu (Solicited)
- 15:00 S15-09 NUMERICAL SIMULATIONS OF MID-LATITUDE IRREGULARITIES  
T. H. ZHANG, Z. Xiao
- 15:20 Break
- 15:40 S15-10 KINETIC THEORY OF FIELD-ALIGNED ELECTRIC FIELD AND CURRENT  
C. Z. CHENG, J. R. Johnson (Solicited)
- 16:10 S15-11 FLUID MODELIZATION OF COLLISIONLESS PLASMAS: A NEW CLOSURE EQUATION  
G. BELMONT, T. Chust
- 16:30 S15-12 KINETIC MODELS FOR THE PARALLEL E FIELD IN AURORAL REGIONS  
J. R. JASPERSE (Solicited)

### **Poster Session**

#### **Thursday, October 5; Sapporo Media Park**

9:30 - 12:30

- S15-P01 THREE-DIMENSIONAL HYBRID SIMULATION OF SOLAR WIND INTERACTION WITH UNMAGNETIZED PLANETS  
H. SHIMAZU
- S15-P02 A MESO-SCALE PARTICLE-IN-CELL SIMULATION MODEL FOR THE AURORA-IONOSPHERE SYSTEM  
L. Mandrake, P. L. PRITCHETT, F. V. Coroniti
- S15-P03 FORMATION OF ELECTROSTATIC SOLITARY WAVES IN KINETIC SIMULATION MODELS WITH OPEN BOUNDARIES  
T. UMEDA, Y. Omura, H. Matsumoto, H. Usui
- S15-P04 THE ROLE OF ELECTRONS IN MAGNETOTAIL DYNAMICS  
V. PEROOMIAN, M. Ashour-Abdalla, L. Zelenyi, D. Schriver



## **S16: Ionosphere-Thermosphere-Mesopause Coupling**

Organizers: T. Killeen, H. Fukunishi and A. Burns

### **Monday, October 2; Room 1**

- 9:30 S16-01 STUDYING DYNAMICS IN THE ARCTIC AND SUB-ARCTIC MESOSPHERE USING MF AND INCOHERENT SCATTER RADAR  
C. HALL (Solicited)
- 9:55 S16-02 GEOMAGNETIC ACTIVITY EFFECTS IN THE LOWER THERMOSPHERE  
M. E. Hagan, R. G. Roble, C. S. Hartsough
- 10:10 S16-03 COMPARING ENERGETIC AURORAL PRECIPITATION AS OBSERVED BY PIXIE AND NITRIC OXIDE OBSERVED BY SNOE  
S. M. PETRINEC, D. L. Chenette, W. L. Imhof, C. A. Barth, K. D. Mankoff, D. N. Baker, J. G. Luhmann
- 10:25 S16-04 FEATURES OF THE TIMED DOPPLER INTERFEROMETER (TIDI) OPERATIONAL SCIENCE MODES AND DATA PRODUCTS  
T. L. Killeen, J. F. KAFKALIDIS, W. R. Skinner, D. A. Ortland, Q. Wu, R. J. Niciejewski, D. A. Gell, R. M. Johnson, A. G. Burns, W. Wang
- 10:40 S16-05 MEAN WINDS AND WAVES IN THE UPPER MIDDLE ATMOSPHERE OBSERVED BY POKER FLAT MF RADAR (65.1N, 147.5W) IN 1998-2000  
K. Igarashi, Y. Murayama, D. Rice, R. Watkins
- 10:55 Break
- 11:15 S16-06 INVESTIGATION OF CORRELATED TERDIURNAL OSCILLATIONS IN OH MEINEL (6,2) BAND INTENSITIES AND ROTATIONAL TEMPERATURES AT MID-LATITUDES  
M. J. TAYLOR, L. C. Gardner, W. R. Pendleton (Solicited)
- 11:40 S16-07 STUDYING MESOSPHERE DYNAMICS IN THE ANTARCTIC USING THE UPGRADED INSTRUMENT CLUSTER AT HALLEY  
M. A. Clilverd, M. J. Taylor, M. J. Jarvis, P. Espy, M. C. Rose
- 11:55 S16-08 IDI MEASUREMENTS OF MESOSPHERIC DYNAMICS FROM THE BEAR LAKE OBSERVATORY  
F. T. BERKEY, C. Fish, G. O. L. Jones
- 12:10 S16-09 WAVES IN AIRGLOW STRUCTURES EXPERIMENT 2000: PRELIMINARY RESULTS AND INTERPRETATIONS  
N. IWAGAMI, M. Kubota, K. Oyama, Y. Yamada, H. Onishi, H. Sekiguchi, K. Mori, R. Yoshimura, M. Shimoyama, Y. Murayama, K. Shiokawa, T. Nakamura, the WAVE2000 team
- 12:25 Lunch
- 14:00 S16-10 SEASONAL VARIATIONS OF SOLAR TIDES, PLANETARY AND GRAVITY WAVES IN THE MLT: MULTI-YEAR MF RADAR OBSERVATIONS FROM 2-70 N AND MODELLING COMPARISONS  
A. MANSON (Solicited)
- 14:25 S16-11 MF RADAR OBSERVATIONS OF MESOSPHERE LOWER THERMOSPHERE TIDAL WINDS OVER YAMAGAWA AND WAKKANAI  
S. P. Namboothiri, P. Kishore, K. Igarashi
- 14:40 S16-12 MULTI-RADAR OBSERVATION OF IONOSPHERIC E-REGION IRREGULARITY  
M. YAMAMOTO, R. T. Tsunoda, T. Yokoyama, S. Fukao
- 14:55 S16-13 GENERATION OF ATMOSPHERIC GRAVITY WAVES AND ENERGY BALANCE IN THE IONOSPHERE DRIVEN BY STRONG ELECTRIC FIELDS  
E. Mishin, J. Foster, R. Hunsucker, Y. Dimant
- 15:10 S16-14 MEASUREMENTS OF ELECTRON DENSITY ALTITUDE PROFILES AND ESTIMATION WIND VELOCITY IN THE UPPER ATMOSPHERE FROM RADIO OCCULTATION DATA  
A. PAVELYEV, K. Igarashi
- 15:25 Break

- 15:45 S16-15 A COMPUTER SIMULATION OF IONOSPHERE-THERMOSPHERE COUPLING AND COMPARISON WITH SATELLITE OBSERVATIONS  
S. WATANABE (Solicited)
- 16:10 S16-16 TRAVELING IONOSPHERIC DISTURBANCES AND BAND-LIKE STRUCTURES OF F-REGION FIELD-ALIGNED IRREGULARITIES (FAI) IN MID-LATITUDE IONOSPHERE  
S. FUKAO, M. Yamamoto, A. Saito
- 16:25 S16-17 HALL-MHD SIMULATIONS OF IONOSPHERE-MAGNETOSPHERE COUPLING  
S. C. BUCHERT, R. Fujii, H. Kataoka, L. Rastaetter
- 16:40 S16-18 REAL-TIME MODELING OF THERMOSPHERE / IONOSPHERE SPACE WEATHER USING THE TING GENERAL CIRCULATION MODEL  
A. G. BURNS, W. Wang, T. L. Killeen

**Tuesday, October 3; Royton Hall**

- 9:30 S16-19 THE INFLUENCE OF HIGH-LATITUDE ELECTRIC FIELDS ON THE DYNAMICS OF THE LOWER THERMOSPHERE  
A. D. RICHMOND (Solicited)
- 9:55 S16-20 FEATURES OF THE SEASONAL VARIATION OF GLOBAL GEOMAGNETIC SQ FIELD  
M. TAKEDA
- 10:10 S16-21 DYNAMICAL COUPLING BETWEEN NEUTRALS AND IONS IN THE AURORAL E-REGIONS VERIFIED BY SIMULTANEOUS FPI AND VHF RADAR OBSERVATIONS  
T. SAKANOI, H. Fukunishi, S. Okano, K. Igarashi
- 10:25 S16-22 COMPARISON OF THE AURORAL E REGION NEUTRAL WINDS DERIVED BY THE EISCAT RADAR AND PREDICTED BY NCAR TIME-GCM  
S. NOZAWA, A. D. Richmond, R. Roble, H.-L. Liu
- 10:40 S16-23 VERTICAL WIND OBSERVATIONS IN THE THERMOSPHERE NEAR AURORA WITH FABRY-PEROT INTERFEROMETERS IN ALASKA  
M. ISHII, M. Conde, R. W. Smith, M. Krynicki, E. Sagawa, S. Watari
- 10:55 Break
- 11:15 S16-24 ENERGETICS AND PLASMA DYNAMICS IN THE POLAR E AND F REGIONS  
R. FUJII (Solicited)
- 11:40 S16-25 EFFECTS OF THERMAL EXPANSION ON NEUTRAL VERTICAL MOTIONS IN THE POLAR THERMOSPHERE  
S. Oyama, M. Ishii, Y. Murayama, M. Kubota, S. Nozawa, R. Fujii
- 11:55 S16-26 THE RELATIVE IMPORTANCE OF ELECTRIC FIELDS AND CONDUCTIVITIES IN THE AURORAL ELECTROJETS DURING SUBSTORMS  
E.-A. CHO, Y. Kamide, B.-H. Ahn
- 12:10 S16-27 VARIATIONS OF THE ATOMIC OXYGEN GREEN LINE BRIGHTNESS ABOVE TIXIE BAY BEFORE SUBSTORM EXPANSION PHASE ONSET  
R. N. BOROEYEV, G. V. Borisov, V. A. Velichko, D. G. Baishev
- 12:25 Lunch
- 14:00 S16-28 THE EISCAT INCOHERENT SCATTER RADARS: PAST AND FUTURE ROLES IN IONOSPHERE-THERMOSPHERE-MESOSPHERE COUPLING STUDIES  
A. P. VAN EYKEN (Solicited)
- 14:25 S16-29 BEHAVIOUR OF EQUATORIAL IONOSPHERE DURING SEVERE SPACE WEATHER EVENTS IN 1998  
Y. SAHAI, P. R. Fagundes, A. A. Pimenta, F. J. Rich, P. J. Sultan, V. H. Rios, J. A. Bittencourt
- 14:40 S16-30 NUMERICAL MODELING OF THE MAGNETIC STORM EFFECTS ON THE UPPER ATMOSPHERE FROM MESOSPHERE UP TO PLASMASPHERE  
A. A. NAMGALADZE, R. Yu. Yurik, O. V. Martynenko

S16

- 14:55 S16-31 AURORAL AND AIRGLOW OBSERVATIONS USING ALL-SKY COOLED-CCD IMAGERS IN JAPAN DURING MAGNETIC STORMS (1998-2000)  
K. Shiokawa, Y. Otsuka, Y. Sahai, T. Ogawa, K. Igarashi
- 15:10 S16-32 SEASONAL DEPENDENCE OF THE NIGHTTIME TRAVELING IONOSPHERIC DISTURBANCES IN THE MID-LATITUDE IONOSPHERE  
A. SAITO, M. C. Kelley, T. Tsugawa, J. J. Makela, Y. Otsuka, S. Miyazaki
- 15:25 Break
- 15:45 S16-33 EQUATORIAL PLASMA FOUNTAIN AND ITS EFFECTS  
N. BALAN, S. Fukao (Solicited)
- 16:10 S16-34 THERMOSPHERIC AND IONOSPHERIC DYNAMICS IN THE AURORAL REGION  
H. SHINAGAWA, S. Oyama, M. Ishii, S. Nozawa, R. Fujii
- 16:25 S16-35 ALL-SKY IMAGING OBSERVATIONS OF F-REGION AND MESOSPHERIC EMISSIONS  
G. K. MUKHERJEE, L. Carlo, S. H. Mahajan, P. T. Patil
- 16:40 S16-36 PRE-PKU MODEL AND ITS APPLICATIONS  
J.-S. WANG, Z. Xiao

## Poster Session

**Wednesday, October 4; Sapporo Media Park**

8:30 - 12:00

- S16-P01 QUASI 2-DAY WAVE IN THE MIDDLE ATMOSPHERE OVER YAMAGAWA AND WAKKANAI MF RADARS  
P. Kishore, S. P. Namboothiri, K. Igarashi
- S16-P02 OBSERVATIONS AND MODELING OF AIRGLOW AND TEC FLUCTUATIONS INDUCED BY TRAVELING IONOSPHERIC DISTURBANCES  
T. OGAWA, N. Balan, Y. Otsuka, K. Shiokawa
- S16-P03 SUBAURORAL LOWER THERMOSPHERE TEMPERATURE DURING STRATOSPHERE WARMING IN FEBRUARY 2000  
S. V. NICKOLASHKIN, V. M. Ignatyev
- S16-P04 A STUDY OF THE NEAR MESOPAUSE TEMPERATURE BEHAVIOUR OVER YAKUTIA DURING 1998-2000 OBSERVATION PERIOD  
P. P. AMMOV, G. A. Gavrilieva
- S16-P05 D-REGION WINTER ANOMALY OBSERVED WITH IONOSONDE AND MF RADAR  
G. Ma, K. Igarashi, T. Maruyama
- S16-P06 CHARACTERISTIC OF ATMOSPHERIC GRAVITY WAVES OBSERVED DURING THE WAVE2000 CAMPAIGN IN JAPAN  
H. Onishi, Y. Yamada, H. Fukunishi, M. Kubota, M. Ishii, Y. Murayama, K. Igarashi
- S16-P07 THE INTERPLANETARY DISTURBANCES AND THE IONOSPHERIC BEHAVIOR OVER NORTH CHINA ON APR. 6, 2000  
D. H. ZHANG, Z. Xiao
- S16-P08 MODELING STUDIES ON DAY-TO-NIGHT TEMPERATURE VARIATIONS IN THE THERMOSPHERE  
H. FUJIWARA, M. Suzuki, H. Fukunishi
- S16-P09 OBSERVATION OF AURORAL SPECTRUM WITH A NEW AURORA SPECTROGRAPH  
S. OKANO, T. Sakanoi, M. Taguchi, T. Aso, M. Ejiri
- S16-P10 MAGNETOSPHERIC DISTURBANCE EFFECTS ON EQUATORIAL THERMOSPHERIC WINDS AND SPREAD-F  
M. A. ABDU
- S16-P11 INVESTIGATIONS INTO [OI] 558 NM NIGHTGLOW EMISSIONS DURING 1991-1993 AND 1997-2000 IN EAST SIBERIA  
A. V. Mikhalev, I. V. Medvedeva

- S16-P12 NUMERICAL MODELING OF THE LONGITUDINAL VARIATIONS IN THE THERMOSPHERE-IONOSPHERE-PLASMASPHERE SYSTEM  
O. V. Martynenko, A. A. NAMGALADZE, A. N. Namgaladze, V. A. Shlykov
- S16-P13 A NEW COUPLED IONOSPHERE-THERMOSPHERE MODEL — A TOOL OF SPACE WEATHER FORECASTING  
N. Maruyama, S. Watanabe, T. J. Fuller-Rowell
- S16-P14 LONG TERM OBSERVATION OF NEUTRAL WIND VELOCITY AND TEMPERATURE IN THE MID-LATITUDE THERMOSPHERE USING AN IMAGING FABRY-PEROT INTERFEROMETER  
T. Kadota, K. Shiokawa, Y. Otsuka, M. K. Ejiri, T. Ogawa
- S16-P15 MIDLATITUDE IONOSPHERIC DISTURBANCES DURING GEOMAGNETIC STORMS  
L. SIZOVA, Gaivoronskaya
- S16-P16 INTERHEMISPHERE COMPARISON OF SPORADIC E OCCURRENCES OBSERVED BY IONOSONDE NETWORK  
M. Ikeda, K. Igarashi, H. Kato, J. Wu, P. Wilkinson
- S16-P17 MAPPING OF TOTAL ELECTRON CONTENT OVER JAPAN USING GLOBAL POSITIONING SYSTEM OBSERVATIONS  
Y. OTSUKA, T. Tsugawa, A. Saito, S. Miyazaki, S. Fukao, T. Ogawa
- S16-P18 WAVE DISTURBANCES NEAR TERMINATOR IN DEPENDING ON A PHASE OF A CYCLE OF SOLAR ACTIVITY  
P. M. NAGORSKY, Yu. E. Taraschuk, B. B. Tscibikov
- S16-P19 A NEW TYPE OF FIELD-ALIGNED IRREGULARITIES IN MID-LATITUDE E-REGION IONOSPHERE  
S. FUKAO, M. Yamamoto
- S16-P20 SPATIAL DISTRIBUTION OF IRREGULARITY OCCURRENCE RATE IN THE SUBAURORAL F REGION AS OBSERVED BY THE SUPERDARN RADARS  
K. HOSOKAWA, T. Iyemori, A. S. Yukimatu, N. Sato
- S16-P21 MODELING THE HIGH-LATITUDE IONOSPHERE  
A. V. TASHCHILIN, E. B. Romanova
- S16-P22 STUDIES OF GPS-TEC USING GEONET, MU RADAR AND SUPIM  
N. BALAN, Y. Otsuka, T. Tsugawa, T. Ogawa, S. Fukao
- S16-P23 MID-LATITUDE IONOSPHERIC DISTURBANCES DURING THE FEBRUARY 11-12, 2000 GEOMAGNETIC STORM  
Y. SAHAI, K. Shiokawa, Y. Otsuka, C. Ihara, T. Ogawa, K. Igarashi, S. Miyazaki, A. Saito
- S16-P24 ON RELATION OF EQUATORIAL IONOSPHERIC SCINTILLATION PHENOMENA AND GEOMAGNETIC FIELD (MAINLY DURING PREASA-5 CAMPAIGN PERIOD)  
H. Kagami, H. Minakoshi, K. Igarashi, O. Petnim, N. Hemmakorn
- S16-P25 APPROACHES TO STUDY THE IONOSPHERIC ANOMALIES WITH GPS AT A SINGLE STATION  
XIAO ZUO, Zhang Donghe, Chang Qi
- S16-P26 IONOSPHERIC HEIGHT CHANGES NEAR THE MAGNETIC EQUATOR AND VORTEX-LIKE EXB DRIFT  
T. MARUYAMA, K. Nozaki, M. Yamamoto, S. Fukao
- S16-P27 RADIO TRANSLUENCE METHOD AND MONITORING THE EARTH IONOSPHERE  
V. M. SMIRNOV
- S16-P28 ZONAL DRIFTS OF IONOSPHERIC PLASMA DEPLETIONS OVER BRAZIL FROM 1980 TO 1994  
J. H. A. SOBRAL, M. A. Abdu, P. M. T. Santos, H. Takahashi
- S16-P29 SPACE-TIME PECULIARITIES ANNUAL VARIATION OF GEOMAGNETIC FIELD LEVEL AND ITS POSSIBLE SOURCE  
V. POGREBNOY
- S16-P30 VHF 1/F<sup>2</sup>ALPHA NOISE OF MIDLATITUDE IONOSPHERE DURING SOLAR ECLIPSE AND MORNING TERMINATOR PASSING  
S. I. MUSATENKO, Yu. S. Musatenko, M. M. Medvedsky, O. A. Sukhiy, A. C. Slipchenko, V. Ya. Cholij, E. V. Kurochka, B. N. Skoritchenko

## **S17: Middle Atmosphere Including Response to Forcing From Above and Below**

Organizers: M. Geller and T. Tsuda

### **Tuesday, October 3; Room 1**

Chairperson: T. Tsuda

- 9:30 S17-01 THE TROPICAL COLD POINT TROPOPAUSE: QBO AND ENSO INFLUENCES  
M. A. GELLER
- 10:00 S17-02 A NUMERICAL EXPERIMENT ON INTRASEASONAL AND INTERANNUAL VARIATIONS OF THE  
TROPOSPHERE-STRATOSPHERE COUPLED SYSTEM  
M. TAGUCHI, S. Yoden
- 10:17 S17-03 ATMOSPHERIC PROCESSES IN THE TROPICAL TROPOPAUSE REGION REVEALED FROM 1998-  
2000 SOWER/PACIFIC CAMPAIGNS  
F. HASEBE, M. Shiotani, M. Fujiwara, H. Voemel, S. Oltmans (Solicited)
- 10:47 Break
- 11:10 S17-04 POLAR STRATOSPHERIC CLOUDS (PSCS) OBSERVED FROM SPACE  
S. HAYASHIDA (Solicited)
- 11:40 S17-05 SIMULATION OF OZONE VARIATIONS IN CHEMICAL CLIMATE MODELS  
M. TAKAHASHI, M. Nakamoto, T. Nagashima (Solicited)
- 12:10 S17-06 MIDDLE ATMOSPHERE RESPONSE TO STATIONARY TROPOSPHERIC WAVES AT HIGH  
LATITUDES OF THE SOUTHERN HEMISPHERE: 3-D MODEL RUNS  
A. KRIVOLUTSKY, A. Ebel, A. Klyuchnikova, M. Banin
- 12:27 Lunch

Chairperson: M. A. Geller

- 14:00 S17-07 GRAVITY WAVE CHARACTERISTICS IN THE ANTARCTIC REVEALED BY OPERATIONAL  
RADIOSONDE DATA AT SYOWA STATION  
M. YOSHIKI, K. Sato, N. Kizu
- 14:17 S17-08 AN INTERHEMISPHERIC COMPARISON OF GRAVITY WAVES IN THE POLAR MESOSPHERE  
R. A. VINCENT, A. Dowdy, I. M. Reid, K. Igarashi, Y. Murayama, D. Murphy
- 14:34 S17-09 CHARACTERISTICS OF WAVE STRUCTURES IN THE LOWER STRATOSPHERE OVER THAILAND  
S.-Y. OGINO, A. Watanabe, M. D. Yamanaka, GAME-T Enhanced Rawinsonde  
Observation Members
- 14:51 S17-10 A GLOBAL DISTRIBUTION OF ATMOSPHERIC GRAVITY WAVES IN THE STRATOSPHERE  
REVEALED BY THE GPS OCCULTATION DATA  
T. TSUDA, C. Rocken, R. Ware
- 15:08 S17-11 NUMERICAL SIMULATION OF THE MESOPAUSE SEMIANNUAL OSCILLATION  
Y. MIYOSHI
- 15:25 Break
- 15:40 S17-12 THE DROPPS PROGRAM: A STUDY OF THE POLAR SUMMER MESOSPHERE WITH ROCKET,  
RADAR AND LIDAR  
R. A. GOLDBERG (Solicited)
- 16:10 S17-13 SOLAR DISTURBANCES AND THEIR GEOSPACE IMPACTS: SNOE, SAMPEX, AND POLAR  
OBSERVATIONS  
D. N. BAKER, C. A. Barth, K. Mankoff, S. C. Solomon, S. G. Kanekal, S. Petrinec, J. G. Luhmann,  
G. M. Mason, J. E. Mazur

- 16:27 S17-14 UPPER MESOSPHERIC AND LOWER THERMOSPHERIC MANIFESTATIONS OF A STRATOSPHERIC SUDDEN WARMING EVENT OVER EUREKA CANADA (80 N)  
R. WALTERSCHEID, G. Sivjee, R. Roble
- 16:44 S17-15 PLANETARY WAVE MODULATION OF NOCTILUCENT CLOUDS AND PMSE  
S. KIRKWOOD, K. Stebel, H. Nilsson, N. J. Mitchell, A. Rechou

#### Thursday, October 5; Room 1

Chairperson: R. A. Vincent

- 14:00 S17-16 THE COUPLING OF TIDES AND PLANETARY WAVES IN THE MLT REGION  
N. J. MITCHELL (Solicited)
- 14:30 S17-17 MF RADAR OBSERVATIONS OF MOTIONS WITH PERIODS NEAR 12 HOURS IN THE MESOSPHERE AT HIGH NORTHERN LATITUDES  
D. M. RIGGIN, Y. Murayama, K. Igarashi, W. Singer
- 14:47 S17-18 STUDY OF TIDAL DYNAMICS IN THE ARCTIC MESOSPHERE AND LOWER THERMOSPHERE BY THE EISCAT RADAR AND COORDINATED GROUND-BASED FACILITIES  
T. ASO
- 15:04 S17-19 DYNAMICS OF EQUATORIAL MESOSPHERE OVER PONTIANAK  
S. SAROSO, A. Nuryanto, S. L. Manurung, G. Wikanto, O. Sobari, T. Tsuda, R. A. Vincent
- 15:21 Break
- 15:40 S17-20 HIDDEN TREASURES BENEATH THE TIDES: UNCOVERING REGIONAL AND PLANETARY STRUCTURES IN SATELLITE NIGHTGLOW MAPS  
J. F. KAFKALIDIS, G. M. Fall, P. B. Hays (Solicited)
- 16:10 S17-21 STUDY OF HORIZONTAL AND VERTICAL STRUCTURE OF THE MESOPAUSE REGION WITH THE MU RADAR AND OPTICAL OBSERVATIONS  
T. NAKAMURA, T. Tsuda, S. Morita, K. Shiokawa, M. K. Ejiri, T. Ogawa, Y. Yamada, H. Fukunishi
- 16:27 S17-22 AIRGLOW OBSERVATIONS OF GRAVITY WAVES AT ADELAIDE, AUSTRALIA  
J. Woithe, I. M. Reid
- 16:44 S17-23 OBSERVATIONS OF THE MESOPAUSE REGION BY MULTI-LIDAR SYSTEM  
C. Nagasawa, M. Abo, Y. Shibata

S17

#### Poster Session

##### Thursday, October 5; Sapporo Media Park

9:30 - 12:30

- S17-P01 A NUMERICAL EXPERIMENT ON 3D MOTIONS AROUND THE MID-LATITUDE TROPOSPHERIC JET  
N. TAKAHASHI, S. Yoden
- S17-P02 MST RADAR OBSERVATIONS OF TROPICAL TROPOPAUSE OVER GADANKI (13.450 N, 79.180 E)  
Y. JAYA RAO, P. C. S. Devara
- S17-P03 COSMIC RAY INFLUENCE ON CHEMICAL COMPOSITION OF THE MIDDLE ATMOSPHERE: DATA ANALYSIS AND PHOTOCHEMICAL MODELING  
A. KRIVOLUTSKY
- S17-P04 MODELING THE EFFECTS OF THE OCTOBER 1989 SPE ON MIDDLE ATMOSPHERIC NO AND OZONE USING A DETAILED ION AND NEUTRAL CHEMISTRY MODEL  
P. T. VERRONEN, E. Turunen, Th. Ulich, E. Kyrola
- S17-P05 VARIATIONS IN SOLAR UV-B RADIATION AT A TROPICAL SITE DURING OCTOBER-DECEMBER MONTHS  
S. SAMPATH, G. Mohan Kumar, V. Muralidharan, V. N. Neelakandan
- S17-P06 A MESO-SCALE SIMULATION OF GRAVITY WAVES GENERATED BY CUMULUS CONVECTION DURING TOGA-COARE  
J. Kosaka, T. Horinouchi
- S17-P07 INSTABILITY OF ACOUSTIC GRAVITY WAVES IN A NONISOTHERMAL ATMOSPHERE  
O. N. SAVINA



## **S18: Solar Variability Effects Upon the Lower Atmosphere and Climate**

Organizers: J. Austin and L. Hood

### **Friday, October 6; Room 1**

Chairperson: K. Labitzke

- 9:30 S18-01 THE SUNSPOT CYCLE AND THE LOWER ATMOSPHERE  
K. LABITZKE, H. Van Loon (Solicited)
- 10:00 S18-02 CHARACTERISTICS OF SHORT-TERM AND LONG-TERM VARIATIONS OF THE ARCTIC POLAR VORTEX  
H. NAKANE (Solicited)
- 10:30 S18-03 ABOUT THE INSTABILITY OF SOLAR-CLIMATIC RELATIONS  
K. GEORGIEVA, B. Kirov
- 10:50 Break
- 11:10 S18-04 MODELLING THE EFFECTS OF SOLAR CYCLES AND SOME COMPARISONS WITH OBSERVATIONS  
J. AUSTIN, V. Williams, J. Haigh (Solicited)
- 11:40 S18-05 SOLAR ACTIVITY INDUCED CHANGES IN THE LOWER AND MIDDLE ATMOSPHERE  
K. MOHANAKUMAR
- 12:00 S18-06 NONSTATIONARY CYCLES IN C14-DATA AND CLIMATE CHANGES  
T. V. KUZNETSOVA, L. B. Tsurulnik, A. Ruzmaikin, J. Feynman
- 12:20 Lunch

Chairperson: J. Austin

- 14:00 S18-07 THE EFFECT OF THE QBO AND THE SOLAR CYCLE ON THE STRATOSPHERIC CIRCULATION IN THE NH AND THE SH  
Y. NAITO (Solicited)
- 14:30 S18-08 CONNECTION BETWEEN THE SOLAR CYCLE AND THE QBO: THE MISSING LINK  
M. Salby, P. Callaghan (Solicited)
- 15:00 S18-09 UPPER ATMOSPHERE HEAT BUDGET OVER THAT LAST TWO DECADES  
D. KNIPP, F. Rich, F. Chun, L. Krause, D. Evans
- 15:20 Break
- 15:40 S18-10 INFLUENCE OF COSMIC RAYS ON THE ATMOSPHERIC PROCESSES  
V. I. Ermakov, Yu. I. Stozhkov, P. E. POKREVSKY
- 16:00 S18-11 THE EFFECT OF VARIATIONS IN GALACTIC AND SOLAR COSMIC RAYS ON THE EARTH'S WEATHER  
O. A. TROSHICHEV (Solicited)
- 16:30 S18-12 COSMIC RAY VARIATIONS EFFECT ON HIGH-LATITUDE TROPOSPHERE: OBSERVATIONS AND MODEL  
A. L. MOROZOVA, M. I. Pudovkin
- 16:50 S18-13 MODEL OF THE INCREASING OF THE QUASIBIENNIAL SOLAR ULTRAVIOLET EFFECTS UPON THE STRATOSPHERE AND LOWER ATMOSPHERE  
K. A. BOYARCHUK, G. S. Ivanov-Kholodny

**S18**



## Poster Session

Thursday, October 5; Sapporo Media Park

9:30 - 12:30

- S18-P01* THE ARCTIC SEA ICE EXTENT AS A FUNCTION OF SOLAR VARIABILITY  
A. V. SHIROCHKOV, L. N. Makarova, D. M. Volobuev
- S18-P02* THE INFLUENCE OF SOLAR VARIABILITY ON THE ATMOSPHERIC CIRCULATION IN THE BERLIN CLIMATE MIDDLE ATMOSPHERE MODEL (CMAM)  
K. LABITZKE, K. Weber, U. Langematz
- S18-P03* SEVERE MAGNETIC STORMS AND SURFACE PRESSURE ASSOCIATIONS AT HIGH LATITUDE  
M. LAL
- S18-P04* SOLAR AND TROPOSPHERIC VARIABILITY EFFECTS ON SCHUMANN RESONANCES  
B. ZIEGER, G. Satori
- S18-P05* THE ATMOSPHERIC NITROGEN DIOXIDE (NO<sub>2</sub>) VARIATION AND GALACTIC COSMIC RAYS  
I. A. Mironova, M. I. Pudovkin
- S18-P06* MAGNETIC-SOLAR-CYCLE-INDUCED RAINFALL VARIATIONS IN BRAZIL  
G. PUGACHEVA, A. Gusev, I. Martin, W. Spjeldvik
- S18-P07* ON RELATIONSHIP BETWEEN SOLAR VARIABILITY AND INTENSITY OF CYCLONES OVER EASTERN EUROPE  
O. F. TYRNOV, I. G. Zakharov
- S18-P08* VARIATIONS OF SOLAR ENERGETIC PARTICLE AND EUV FLUXES GOVERN THE CLIMATIC CHANGES  
R. N. SINGH
- S18-P09* SEVERE MAGNETIC STORM SIGNATURE IN LOWER ATMOSPHERE AT MAGNETIC EQUATOR  
M. Lal, K. U. Nair, S. Selvaraj
- S18-P10* SOLAR AND GEOMAGNETIC CYCLES AS REFLECTION OF SOLAR SYSTEM DYNAMICS  
T. V. KUZNETSOVA, L. B. Tsurulnik
- S18-P11* COSMIC RAYS IN THE EARTH'S ATMOSPHERE: DIRECT AND INVERSE PROBLEMS  
L. I. DORMAN
- S18-P12* STATISTICAL CHARACTERISTICS OF THUNDERSTORM RADIATION AND SOLAR ACTIVITY  
S. I. MUSATENKO, V. V. Fastivets, Yu. S. Musatenko, O. A. Sukhiy, L. A. Musatenko
- S18-P13* SEISMOACTIVE REGION OF KURILES AND JAPAN: INFLUENCE OF COSMIC FACTORS. EXPERIMENTAL DATA AND THEORETICAL ESTIMATES  
T. V. BARLIAEVA, M. I. Pudovkin, A. L. Morozova
- S18-P14* A COMPARATIVE STUDY OF SPORADIC E-LAYER AT KARACHI DURING THE SOLAR MAXIMUM (1989-90) AND SOLAR MINIMUM (1996-97)  
HUSAN ARA, Z. M. Khan
- S18-P15* LOW CLOUD PROPERTIES INFLUENCED BY COSMIC RAYS  
N. MARSH, H. Svensmark

## **S19: Active Experiments and Spacecraft-Environment Interactions**

Organizers: H. G. James and H. Usui

### **Friday, October 6; Room 4**

Chairperson: P. A. Bernhardt

- 9:30 S19-01 HIGH LATITUDE HF INDUCED PLASMA TURBULENCE  
B. ISHAM, C. La Hoz, M. T. Rietveld, F. T. Djuth, T. Hagfors, T. Grydeland (Solicited)
- 9:50 S19-02 SIMULATION STUDY ON UPPER HYBRID AND ELECTROMAGNETIC EMISSIONS IN IONOSPHERIC RADIO MODIFICATION EXPERIMENTS  
H. O. UEDA, Y. Omura, H. Matsumoto
- 10:10 S19-03 TRIGGERING OF LOCAL SUBSTORM ACTIVATIONS INDUCED BY THE TROMSO HEATING FACILITY  
N. F. BLAGOVESHCHENSKAYA, V. A. Kornienko, B. Thide, M. T. Rietveld, M. J. Kosch
- 10:30 S19-04 THE STUDIES OF THE IRREGULAR STRUCTURE OF THE LOWER IONOSPHERE BY THE API TECHNIQUE  
N. V. BAKHMET'EVA, V. V. Belikovich, E. A. Benediktov, A. V. Tolmacheva
- 10:50 Break
- Chairperson: Keith G. Balmain
- 11:10 S19-05 ACTIVE EXPERIMENTS WITH HIGH-SPEED INJECTIONS FROM SPACE  
P. A. Bernhardt, R. E. Erlandson, J. Zetzer (Solicited)
- 11:50 S19-06 BEAM-PLASMA EFFECTS OF ARTIFICIAL ORBITAL INJECTION (OVERVIEW OF APEX MISSION RESULTS)  
V. Oraevsky, Yu. RUZHIN, V. Dokukin (Solicited)
- 12:10 S19-07 STABILITY OF ELECTRODYNAMIC TETHERS  
M. DOBROWOLNY (Solicited)
- 12:30 Lunch

Chairperson: B. E. Gilchrist

- 14:00 S19-08 NUMERICAL SIMULATIONS OF ELECTROMAGNETIC INTERACTION BETWEEN ANTENNA AND SPACE PLASMA  
H. USUI, H. Matsumoto, Y. Omura
- 14:20 S19-09 OF CURRENT INTEREST: PROBES AND ELECTRODES IN SPACE MAGNETOPLASMAS  
J. G. LAFRAMBOISE (Solicited)
- 15:00 S19-10 FLOATING POTENTIALS OF CONDUCTORS IN SPACECRAFT DIELECTRICS  
K. G. BALMAIN, M. G. Serban, G. R. Dubois, P. C. Kremer, A. A. E. Luttgen
- 15:20 Break
- Chairperson: H. Usui
- 15:40 S19-11 COMPUTATION OF CURRENT TO A MOVING BARE TETHER USING QUASINEUTRALITY CONDITION  
T. ONISHI, M. Martinez-Sanchez, D. L. Cooke
- 16:00 S19-12 FIRST RESULTS FROM THE RADIO PLASMA IMAGER ON THE IMAGE MISSION  
B. REINISCH, the RPI Team (Solicited)
- 16:20 S19-13 PLASMA SOUNDER EXPERIMENT IN THE LOWER ALTITUDE IONOSPHERE (S310-28 ROCKET EXPERIMENT)  
T. ONO (Solicited)
- 16:40 S19-14 SUMMARY OF SYMPOSIUM S19  
H. G. JAMES

**S19**

## Poster Session

Thursday, October 5; Sapporo Media Park

9:30 - 12:30

- S19-P01 HF BISTATIC SCATTER OBSERVATIONS OF ARTIFICIAL FIELD-ALIGNED IRREGULARITIES UNDER DIFFERENT ELEVATION ANGLES OF THE TROMSO HF HEATER ANTENNA BEAM  
N. F. BLAGOVESHCHENSKAYA, M. T. Rietveld, V. A. Komienko
- S19-P02 INVESTIGATION INTO THE SPORADIC-E LAYER AND ITS ASSOCIATED PHENOMENA  
L. KAGAN
- S19-P03 KINETIC EFFECTS RELATED TO HF PUMPING OF THE IONOSPHERE  
S. M. GRACH
- S19-P04 TEMPORAL BEHAVIOR OF BROAD UPSHIFTED MAXIMUM IN STIMULATED ELECTROMAGNETIC EMISSIONS  
S. M. GRACH, E. N. Sergeev, Bo Thide, T. B. Leyser, T. Carozzi, V. F. Frolov, G. P. Komrakov
- S19-P05 HF DOPPLER RADAR STUDY OF CHEMICAL MODIFICATIONS OF THE IONOSPHERE  
O. TYRNOV, L. Kostrov, S. Martynenko, V. Pushin, V. Rozumenko
- S19-P06 ARTIFICIAL IONIZED REGION IN THE ATMOSPHERE AND ITS APPLICATIONS  
N. BORISOV, A. Gurevich
- S19-P07 INFLUENCE OF THE LONGITUDINAL INHOMOGENEITY ON INTERACTION OF WAVES IN STRIATIONS  
N. BORISOV
- S19-P08 GENERATION OF INTERNAL GRAVITATIONAL WAVES BY PERIODIC HEATING OF AN IONOSPHERE BY USING "SURA" FACILITY  
N. A. Mityakov, V. O. Rapoport, F. I. Vybornov
- S19-P09 INVESTIGATION OF THE ELECTRON AND PLASMA BEAMS INTERACTION WITH IONOSPHERE: THE EXPERIMENT ONBOARD THE MIR STATION  
S. I. KLIMOV, V. A. Grushin, I. A. Dobrovolskiy Yu. V. Lissakov, M. N. Nozdrachev, A. A. Petrukovich, S. A. Romanov, S. P. Savin, A. A. Skalsky, O. R. Grigoryan, E. A. Grachev, O. V. Lapshinova, A. V. Markov, B. A. Mednikov, S. B. Ryabukha, I. V. Tchurilo, F. L. Dudkin, V. E. Korepanov, G. Berghofer, W. Magnes, W. Riedler, K. Schwingenschuh, H. U. Auster, K.-H. Fomakon, W. W. L. Taylor, W. E. Pine, N. N. Antropov, A. S. Mashkov, N. M. Pushkin
- S19-P10 MODELLING OF OZONE PRODUCTION BY POWERFUL ELECTRON BEAM INJECTION AT STRATOSPHERE  
V. N. Oraevsky, Yu. Ruzhin, N. BORISOV (Solicited)
- S19-P11 GENERATION OF ALFVEN WAVE BY ORBITAL CRRES INJECTION OF BARIUM CLOUD IN MAGNETOSPHERE  
V. Oraevsky, Yu. Ruzhin, V. Badin, M. DEMINOV
- S19-P12 RADIATION BELT PARTICLES MIRRORING BY PLASMA BEAM INJECTION IN BMA IONOSPHERE REGION  
Yu. RUZHIN, V. Korobeinikov, V. Skomarovsky
- S19-P13 THE MULTIPROBING ONBOARD MEASUREMENTS OF MAGNETIC FIELD VARIATIONS DUE TO XENON PLASMA JET INJECTION (APEX PROJECT)  
Yu. RUZHIN, V. Dokukin, V. Korobeinikov
- S19-P14 DISTANT CORONA PLASMA PROBING ON 30R0 BY ELECTRON GUN OPERATION ONBOARD OF INTERHELIO-PROBE MISSION  
V. Oraevsky, Yu. RUZHIN, V. Kuznetsov, V. Dokukin
- S19-P15 TRANSITIONAL RADIATION OF THE MODULATED ELECTRON BEAMS IN THE ACTIVE BEAM-PLASMA EXPERIMENTS IN THE IONOSPHERE  
I. O. ANISIMOV, O. I. Kelnyk, I. Yu. Kotlyarov, Yu. E. Kovalyov, S. M. Levitsky, Yu. V. Maruda, I. M. Voronov
- S19-P16 INHOMOGENEOUS PLASMA DIAGNOSTICS VIA TRANSITIONAL RADIATION OF THE CHARGED BUNCHES  
I. O. ANISIMOV, I. A. Blazhko, K. I. Lyubich

- S19-P17 DYNAMICS OF THE ELECTRON BEAM-PLASMA INTERACTION IN THE SPACECRAFT VICINITY  
G. LIZUNOV, A. Volokitin, I. Blazhko
- S19-P18 TRANSIENT RESPONSE OF IONOSPHERIC PLASMA TO DISCHARGE ON SPACECRAFT SURFACE  
M. CHO, R. Raju, M. Hikita, K. Tanaka, S. Sasaki
- S19-P19 EXPERIMENTS WITH SIMULATED BARE ELECTRODYNAMIC TETHERS IN A DENSE, FLOWING, HIGH-SPEED PLASMA  
B. E. Gilchrist, S. G. Bilen
- S19-P20 COMPUTER SIMULATION OF SPACECRAFT CHARGING AT THE CONDITIONS OF CHARGED PARTICLES INJECTION IN MAGNETOSPHERE  
K. Krupnikov, A. Makletsov, V. MILEEV, L. Novikov
- S19-P21 MATHEMATICAL MODEL OF SPACECRAFT CHARGING IN LOW-EARTH ORBIT  
K. Krupnikov, A. MAKLETISOV, V. Mileev, L. Novikov, V. Sinolits
- S19-P22 EFFECTS OF INJECTED ELECTRON FLOW ON A MAGNETIC FIELD GENERATION IN THE NEARSATELLITE PLASMA  
V. V. AFONIN, N. V. Baranets, B. A. Ryabov
- S19-P23 ANALYSIS OF SPACECRAFT CHARGING ACCOMPANYING ION ENGINE OPERATION  
I. FUNAKI, H. Kuninaka, Y. Nakayama
- S19-P24 REAL TIME OBSERVATION OF CHARGE ACCUMULATION IN PMMA UNDER ELECTRON BEAM IRRADIATION  
Y. TANAKA, H. Tanaka, N. Tomita, M. Murooka, T. Takada
- S19-P25 TOTAL DOSE MEASUREMENT BY SMALL DOSIMETERS FOR SPACECRAFT  
Y. Kimoto, H. Ohira, H. Koshiishi, H. Matsumoto, T. Goka
- S19-P26 ARTIFICIAL IONOSPHERIC DISTURBANCE STUDY BY RADIO PULSES SOUNDING  
G. I. TERINA
- S19-P27 SIMULATION OF POWERFUL EMISSION ACTION ON IONOSPHERIC PLASMA  
G. I. TERINA, A. V. Kochetov, B. A. Mironov
- S19-P28 RF-INDUCED GLOW PATTERNS AROUND SPACECRAFT DIPOLE ANTENNAS: LABORATORY SIMULATION  
A. A. E. Luttgen, K. G. BALMAIN, H. G. James
- S19-P29 NON-RECIPROCAL SHEATH WAVES ALONG STRUCTURES IN A MAGNETOPLASMA  
A. A. E. Luttgen, K. G. BALMAIN
- S19-P30 CONTROLLED EXPERIMENTS ON HF DUCTING AT AURORAL LATITUDES  
H. G. JAMES
- S19-P31 AMPLITUDE OF ELECTROMAGNETIC SIGNALS IN A PLASMA UNDER OBLIQUE RESONANCE CONDITIONS IN THE TWO-POINT OEDIPUS-C EXPERIMENT  
Yu. V. Chugunov, E. A. Mareev, V. Fiala, H. G. James
- S19-P32 LARGE-SCALE WAVE DISTURBANCES, ARISING IN MIDDLE LATITUDE IONOSPHERE AFTER FLIGHT OF A ROCKET  
P. M. NAGORSKY, Yu. E. Taraschuk, B. B. Tscibikov

## **W1: Space Weather Observation in Future**

Organizers: M. Akioka

### **Tuesday, October 3; Room 1**

- 17:00 SPACE WEATHER OBSERVATION IN FUTURE — INTORODUCTORY  
M. AKIOKA
- 17:10 W1-01 LIVING WITH A STAR: A PROGRAM OF THE NASA SUN-EARTH CONNECTION THEME  
W. J. WAGNER (Solicited)
- 17:40 W1-02 SPACE WEATHER ACTIVITIES OF ESA AND THE ROLE OF DATA COLLECTION AND  
PROCESSING  
A. HILGERS, E. Daly (Solicited)
- 18:10 W1-03 SPACE RADIATION ENVIRONMENT MEASUREMENT IN NATIONAL SPACE DEVELOPMENT  
AGENCY OF JAPAN (NASDA)  
T. GOKA, H. Matsumoto, K. Koga, H. Liu, Y. Kimoto, H. Koshiishi
- 18:30 W1-04 OVERVIEW OF THE L5 MISSION PLAN  
M. AKIOKA, E. Sagawa, T. Nagatsuma, H. Ishibashi, H. Koshiishi, T. Goka, T. Fujita, A. Tsuiki,  
M. Utashima
- 18:50 W1-05 THE BEST USE OF HELIOSPHERIC PHOTOMETRIC IMAGES — TIME-DEPENDENT  
TOMOGRAPHY OF HELIOSPHERIC FEATURES USING GLOBAL THOMSON-SCATTERING DATA  
B. V. JACKSON, P. P. Hick, A. Buffington (Solicited)
- 19:10 W1-06 MONITORING SOLAR ACTIVITY ON THE FAR SIDE OF THE SUN FROM SKY REFLECTED  
LYMAN ALPHA RADIATION  
E. QUEMERAIS, J. L. Bertaux, R. Lallement, E. Kyrola, W. Schmidt

### **Thursday, October 5; Room 1**

- 17:00 W1-07 PROSPECTS FOR SPACE WEATHER OBSERVATIONS WITH THE PROPOSED LOW FREQUENCY  
ARRAY  
B. ISHAM
- 17:20 W1-08 SIMULTANEOUS IMAGING OF ELECTRON DENSITY AND MAGNETIC FIELD DISTRIBUTIONS IN  
THE MAGNETOSPHERE  
S. Ganguly, A. Brown
- 17:40 W1-09 DESIGN, MODELING, AND CONSTRUCTION OF SOLAR-TERRESTRIAL DATA ANALYSIS AND  
REFERENCE SYSTEM (STARS)  
H. Yahara, T. Murata, H. Matsumoto
- 18:00 W1-10 THE TECHNIQUES FOR HANDLING AND PROCESSING OF MAGNETOMETER DATA  
CIRCULATED IN INTERNET  
A. Zaitzev, A. Zherdev
- 18:20 W1-11 A FORECASTER'S REVIEW OF REQUIREMENTS FOR OBSERVATIONS FOR SPACE WEATHER  
OPERATIONS  
G. HECKMAN (Solicited)
- 18:50 OPEN DISCUSSION AND WORKSHOP WRAP-UP

### **Poster Session**

#### **Thursday, October 5; Sapporo Media Park**

9:30 - 12:30

- W1-P01 SPACE WEATHER IN CHINA  
F. S. Wei, X. S. Feng
- W1-P02 AUTOMATIC AND REAL-TIME DETECTION OF GEOMAGNETIC SUDDEN COMMENCEMENT BY  
TRAINED LIFTING WAVELET FILTERS  
K. NIJIMA, S. Takano, T. Araki

## **W2: Satellite Anomalies**

Organizers: Joe H. Allen

### **Tuesday, October 3; Room 3**

- 17:00 W2-01 ASSET VALUES IN SPACE, INSURANCE LOSSES, AND PROSPECTS FOR THE FIRST DECADE OF THE 21ST CENTURY  
C. KUNSTADTER (Solicited)
- 17:20 W2-02 SPACE ENVIRONMENT EFFECTS ON INTERPLANETARY SPACECRAFT  
H. B. GARRETT (Solicited)
- 17:40 W2-03 SPACECRAFT ENVIRONMENT INDUCED ANOMALIES: EXPERIENCE AND PROSPECTIVE AT ESA  
A. HILGERS (Solicited)

### **Thursday, October 5; Room 3**

- 17:00 W2-04 DEMONSTRATION OF THE RICE MAGNETOSPHERIC SPECIFICATION MODEL INCLUDING RELATIVISTIC ELECTRONS  
J. W. Freeman, B. Hausman (Solicited)
- 17:20 W2-05 SATELLITE ANOMALIES: RESULTS FROM THE NATO ASI STORMS 2000 MEETING  
I. A. DAGLIS (Solicited)
- 17:40 W2-06 SATELLITE ANOMALY ASSESSMENTS: OPERATIONS, HISTORY, DATABASING, AND PRODUCT DEVELOPMENT  
S. QUIGLEY (Solicited)

### **Poster Session**

#### **Thursday, October 5; Sapporo Media Park**

9:30 - 12:30

- W2-P01 EFFECTS OF SPACE PARTICLE RADIATION ON LOW EARTH SATELLITES OF INDIAN SPACE RESEARCH ORGANISATION (ISRO)  
D. P. GOEL, P. Soma, S. K ShivaKumar
- W2-P02 CORRELATION OF RADIATION EFFECTS IN ØRSTED SATELLITE INSTRUMENTS AND SYSTEMS WITH HIGH-ENERGY PARTICLE OBSERVATIONS  
P. STAUNING P. Davidsen, M. Cyamukungu
- W2-P03 ACTIVITIES RELATED TO SATELLITE ANOMALY RESEARCH IN JAPAN  
N. YOKOYAMA, T. Goka
- W2-P04 SPACE ENVIRONMENT DATA ACQUISITION EQUIPMENT (SEDA) ON BOARD MISSION DEMONSTRATION TEST SATELLITE-1 (MDS-1)  
H. KOSHIIISHI, H. Matsumoto, Y. Kimoto, T. Goka
- W2-P05 IMPACTS IN ELECTRONICS ON SPACECRAFTS CAUSED BY SOLAR AND GALACTIC ENERGETIC PARTICLES: EXPECTED TIME VARIATIONS AND DEPENDENCE OF SPACECRAFT POSITION  
L. I. DORMAN, M. Murat, Y. Noter
- W2-P06 MAGION-5 SOLAR ARRAY DEGRADATION CONNECTED WITH THE 30 SEPTEMBER 1998 SOLAR EVENT  
P. TRISKA, J. Chum, A. Czapek, F. Hruska, L. Triskova, J. Vojta
- W2-P07 SAAPS — SPACECRAFT ANOMALY ANALYSIS AND PREDICTION SYSTEM  
P. WINTOFT, H. Lundstedt, L. Eliasson, A. Hilgers

W1

W2

### **W3: April-May 1998 / September 1999 Events**

Organizers: J. U. Kozyra and D. N. Baker

#### **Tuesday, October 3; Room 6**

- 19:00 W3-01 MAJOR SOLAR ACTIVITY IN APRIL-MAY 1998  
E. W. CLIVER (Solicited)

#### **Thursday, October 5; Room 6**

- 17:20 W3-02 THE SEPTEMBER 1999 SPACE WEATHER MONTH AND SPARC: A WEB-BASED RESEARCH AND EDUCATION TOOL FOR THE SPACE PHYSICS AND AERONOMY COMMUNITY  
T. L. KILLEEN, R. M. Johnson, J. U. Kozyra, W. Wang, A. G. Burns, P. Knoop, G. Olson, D. Atkins, J. Hardin, T. Weymouth, G. Golden T. Finholt, A. Prakash, F. Jahanian, R. J. Niciejewski (Solicited)
- 19:00 W3-03 THE INTERPLANETARY ASPECTS OF THE 21 - 23 SEPTEMBER AND 21 - 22 OCTOBER, 1999 EVENTS  
R. P. LEPPING (Solicited)
- 19:20 W3-04 SOLAR SOURCES OF GEOACTIVITY DURING SEPTEMBER-OCTOBER 1999  
D. WEBB (Solicited)
- 19:40 W3-05 OVERVIEW OF GEOEFFECTIVENESS DURING THE SCOSTEP S-RAMP CAMPAIGN INTERVALS  
N. J. FOX (Solicited)
- 20:00 W3-06 A REVIEW OF THE GLOBAL IONOSPHERE DURING SPACE WEATHER MONTH, SEPTEMBER 1999  
P. J. WILKINSON, R. Conkright (Solicited)
- 20:20 W3-07 A REVIEW OF FORECASTS MADE DURING SPACE WEATHER MONTH, SEPTEMBER, 1999  
R. THOMPSON, P. J. Wilkinson, J. Kennewell (Solicited)
- 20:40 W3-08 OVERVIEW OF EFFECTS DURING SPACE WEATHER MONTH  
D. H. BOTELER, R. Pirjola, L. Trichtchenko, A. Pulkinnen (Solicited)

#### **Poster Session with Refreshments**

##### **Tuesday, October 3; Room 6**

- 17:20 - 19:00 April-May 1998 Event
- W3-P01 ANALYSIS OF RESULTS OF MULTIDISCIPLINARY OBSERVATIONS MADE ONBOARD US ICE DRIFTING VESSEL SHEBA DURING APRIL-MAY 1998  
A. V. SHIROCHKOV, L. N. Makarova, A. P. Nagurny, A. P. Makshtas
- W3-P02 GROUND-BASED OBSERVATIONS AT ZHONGSHAN STATION, ANTARCTICA DURING THE EARLY MAY, 1998 EVENTS  
R. Y. LIU, H. Q. Hu, L. S. He, Y. H. Liu, S. L. Liu, N. Sato, B. J. Fraser
- W3-P03 LARGE-SCALE GEOMAGNETIC EFFECTS OF MAY 4, 1998  
C. Farrugia, V. JORDANOVA, M. Freeman, C. Cochei, R. Arnoldy, G. Lawrence, M. Engebretson, P. Stauning, G. Rostoker, M. Thomsen, G. Reeves, K. Yumoto
- W3-P04 POWER SYSTEM EFFECTS OF MAY 4, 1998 GEOMAGNETIC DISTURBANCE  
D. H. Boteler, L. Trichtchenko, H.-L. Lam
- W3-P05 LARGE ESF ION DEPLETION EVENT DURING THE APRIL 6-7, 2000 MAGNETIC STORM  
S.-Y. Su, H. C. Yeh, R. A. Heelis, S. C. Yang, J. M. Wu, Y. Wu
- W3-P06 ESTIMATE OF GLOBAL ENERGY DEPOSITION DURING THE MAY 1998 STORM  
G. LU
- W3-P07 IMPACT OF THE MAY 2-5, 1998 GEOMAGNETIC STORM ACTIVITY ON THE DSCS III B-7 SPACECRAFT FRAME POTENTIAL  
L. Habash Krause, D. J. KNIPP

- W3-P08 COUPLING OF ULF WAVES/TRANSIENTS AT THE DAYSIDE CUSP AND THE NIGHTTIME  
CONJUGATE AURORAL REGIONS AS OBSERVED AT CPMN-GREENLAND-ANTARCTIC FACILITY  
K. YUMOTO, N. Yagova, T. Neubert, V. Pilipenko, V. Papitashvili, J. Watermann

**Thursday, October 5; Room 6**

17:20 - 19:00 Space Weather Month Campaign

- W3-P09 IMPACT OF THE INTERPLANETARY SHOCK ON ULF WAVE ACTIVITY: A CASE STUDY OF Pc 1  
AND IPDP EVENTS BEFORE AND AFTER THE SSC ON SEPTEMBER 22, 1999  
J. Kangas, J. Kulima, A. Guglielmi, A. Potapov, K. HAYASHI
- W3-P10 VIEW FROM THE GROUND: 21-22 OCTOBER 1999 EVENT  
L. TRICHTCHENKO, H.-L. Lam, D. H. Boteler
- W3-P11 LOW ALTITUDE OBSERVATIONS OF ELECTRONS AND PROTONS  
F. Soraas, K. Aarsnes, K. Oksavik
- W3-P12 OBSERVING THE AURORAL ELECTROJET WITH THE ØRSTED SATELLITE DURING THE  
SEPTEMBER 1999 SPACE WEATHER MONTH  
T. MORETTO, N. Olsen
- W3-P13 SPECTRAL FEATURES OF GEOMAGNETIC DISTURBANCES FOR S-RAMP EVENTS  
A. Zaitzev, V. I. Odintsov
- W3-P14 COMPARISON BETWEEN SIMULATIONS AND OBSERVATIONS ON SEPTEMBER AND OCTOBER  
1999 EVENTS  
T. OGINO, T. Obara, T. Watanabe, Event Study Group
- W3-P15 RSWI IN SEPTEMBER 1999 SPACE WEATHER MONTH CAMPAIGN  
A. V. DMITRIEV
- W3-P16 FIELD-ALIGNED AND IONOSPHERIC CURRENTS AT HIGH LATITUDES DURING THE  
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- W3-P17 AURORAL ZONE HEATING COMPARISONS FOR SEPTEMBER 1999  
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- W3-P21 COSMIC RAY INTENSITY BEHAVIOR DURING SEPTEMBER 1999  
Z. KOBYLINSKI
- W3-P22 GIC EVENTS DURING THE SPACE WEATHER MONTH OF SEPTEMBER 1999  
H.-L. LAM, D. Boteler, L. Trichtchenko
- W3-P23 PHASE FLUCTUATIONS OF GPS SIGNALS IN HIGH LATITUDE IONOSPHERE DURING  
SEPTEMBER 1999 DISTURBANCE  
I. I. SHAGIMURATOV, L. W. Baran, I. I. Ephishov, A. F. Lagovsky, M. B. Nikitin

W3



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4. To work with other ICSU bodies in the coordination of symposia in solar- terrestrial physics, especially on topics related to SCOSTEP's programmes. Where possible, such symposia will be held in association with meetings of interested ICSU organizations.

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## **Towards Your Enjoyment of *The First S-RAMP* Conference and Your Stay in Japan**

### **Japan? Nippon?**

#### ***Geography***

Japan sprawls in an undisciplined arc consisting of four main islands — Hokkaido, Honshu, Shikoku, and Kyushu — and some 3,900 smaller islands. The archipelago extends 3,000 km, from Hokkaido to Okinawa, taking up about 0.3% of the Earth's surface.

The topography is rugged. Plains accounts for only 13% of the total land area and the mountains are steep. The graceful curve of Japan's highest mountain, Mt. Fuji (3,776 m), is an exception. In Japan 532 mountains are over 2,000 m high.

The land form began its history some 400 million years ago. There are three continental plates that meet under Japan. These are responsible for the active geophysical and geological behavior. There are 67 active volcanoes in Japan, and thousands of hot springs.

#### ***Four Seasons***

One of our favorite utterances is that there are four seasons in Japan. We really feel, smell and taste them: Spring, Summer, Fall, and Winter. Spring is often hazy and vague. May is glorious, but the Rainy Season follows with gray skies, and the islands, except Hokkaido, become soggy for one month. When the rain stops, it is summer. High humidity and high temperatures walk hand-in-hand. In early September, Japan is back where it belongs in the temperate latitudes, experiencing comfortable air temperatures with a hint of melancholy. October is considered, with May, to be the best times to invite visitors from abroad.

#### ***Currency, Banks, and Postal Rates***

Japanese currency is quite simple. Coins are minted in 1, 5, 10, 50, 100, and 500 yen denominations. Bills come in 1,000, 2,000, 5,000, and 10,000 yen denominations. One yen coins cannot individually buy anything, but are useful for paying consumer tax at shops and restaurants.

Banking hours are from 9:00 am to 3:00 pm on weekdays. Banks are closed Saturdays, Sundays, and national holidays. Central city banks in Sapporo have English-speaking staff.

Postal rates:

*Domestic* Postcard 50 yen; Standard-sized letter, 80 yen (up to 25 g), 90 yen (up to 50 g); Non-standard letter, from 130 yen (depending on weight)

*International* Postcard 70 yen; Airmail letter, 90 yen (up to 25 g, within Asia), 110 yen (to North America, Europe, and Middle East), 130 yen (Africa and South America)

(Reproduced and modified from "On your own in Japan" published by JAPAN TELECOM CO., LTD)

## Rules of Thumb Regarding Japanese-Style Gestures and Greetings

### A Guide to Bowing Japanese Style

Correct bowing is a first step towards adulthood. The basic form of bowing is to straighten the back and bend only the upper body. The angle of the bow has meaning, as indicated in the following examples:

#### *Bow at an angle of 5 degrees*

A "Good day" (Kon-nichi-wa) nod. A simple greeting.

#### *Bow at an angle of 15 degrees*

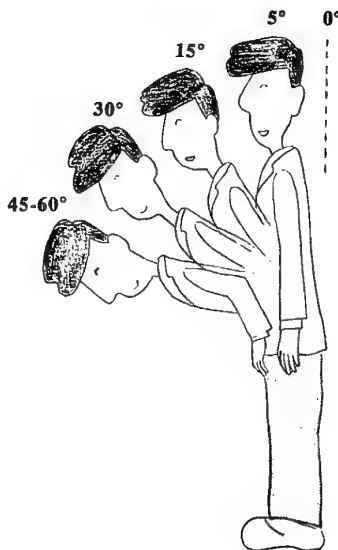
Also a common salutation, such as a "Good morning" (Ohayo, like Ohio) greeting, but a little more formal.

#### *Bow at an angle of 30 degrees*

A respectful bow to indicate appreciation for a kind gesture. Example: Itsumo osewa ni natte orimasu.

#### *Bow at an angle of $\pi/4$ to even $\pi/3$ radians*

To convey deep respect when expressing gratitude or an apology. Example: I deeply apologize for the late submission of my Abstract, Kamide sensei.



### Some Basic Gestures

Even small gestures or casual greetings can serve as unique expressions of a nation's character. Here are some that are common in Japan:



#### *"She is really upset"*

An indication that someone is angry, by simulating a demon using the index fingers in place of horns. Example: Omura's wife was unhappy because he missed the last train home. He received too many requests for last-minute changes in the Program.



#### *"How about a drink?"*

An invitation to go out for a drink. The hand is extended to hold an imaginary cup of sake.



"What now!?"

Scratching your head, indicating that you are perplexed or embarrassed.

"Shouting for Joy - The Banzai Cheer"  
 "Banzai, Banzai, Banzai!" The joyful expression "Banzai" meaning Cheers or Hooray is usually repeated three times. Although it is used less often these days, political candidates and their supporters always do it if they win an election. How about Banzai for a successful S-RAMP Conference in Sapporo?



## Energy Input

### Slurping Right



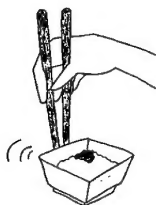
There are a few rules of etiquette at a Japanese meal. Talking with the mouth full is condoned, but slurping of noodles, i.e., Soba, Udon, and Ramen, is encouraged; Noodles only, though, and, only if you know how to slurp right. Slurping allows very hot noodles to be eaten. Please do not assume mistakenly that it is Okay to make music or noise imbibing coffee or green tea.

### Chopsticks Pitfalls to Avoid

The use of chopsticks in Japan has several taboos to keep in mind. Ask your Japanese friends for the origin of these taboos. The following are some of the examples:

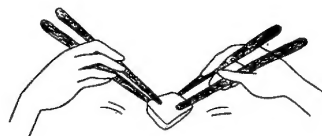
#### Spearfishing

Spearing food with your chopsticks, although it is convenient.



#### Pushing

Pushing and moving dishes with chopsticks.



#### Pass Maneuvers

Passing food to your neighbors — chopsticks to chopsticks.

Text: Modified from "Hello Japan" (Japan National Tourist Organization)

Illustrations: Ayami Kitajima

## Telephone Information

### Useful Numbers

Directory assistance in Japanese and English: 104 (charge: 100 yen/item)

Collect calls: 106

Service in English: 0120-36-4463 (toll free)

### Public Telephones

Public telephones take coins and/or telephone cards. Telephone cards are available at kiosks, convenience stores, and from vending machines often set up near phones. One unit of a card corresponds to 10 yen. For domestic long distance calls, prepare many 10 yen coins or use 100 yen coins: no change can be returned if you insert 100 yen coin and only partly use it. Gray phones can be connected to a computer modem.

### International Calls

International calls can be placed through any private telephone or a pay phone which has an "international" mark.

### International Call Access Number

KDD (001)

IDC (0061) + Country Code + Area Code + Number

ITJ (0041)

For International operator assistance, call 0051.

## The Japan Helpline

The government-supported tourist bureau, **Japan National Tourist Organization (JNTO)**, with tourist information centers in Tokyo and Kyoto, serves and assists foreign visitors while they travel in Japan. Visitors with communication or other travel-related problems can call the following phone numbers in English for help:

Service hours: 9:00-17:00, everyday throughout the year

0088-22-4800

outside Tokyo or Kyoto

3201-3331

in Tokyo (except for Sat. pm, Sun. and national holidays)

371-5649

in Kyoto (daily 9 am.- 5 pm.)

Call these "Japan Helpline" numbers, toll-free from anywhere, about anything from a simple question to emergency help. This is a nationwide telephone service providing you as a visitor from abroad with a variety of tourist information and other assistance. Keep in mind this service is available to you only during your stay in Japan and cannot be used overseas. Please remember that when you are in Tokyo (area code 03) or in Kyoto (area code 075), you must place your call locally to the above numbers (10 yen per minute).

# Table of the First S-RAMP Conference

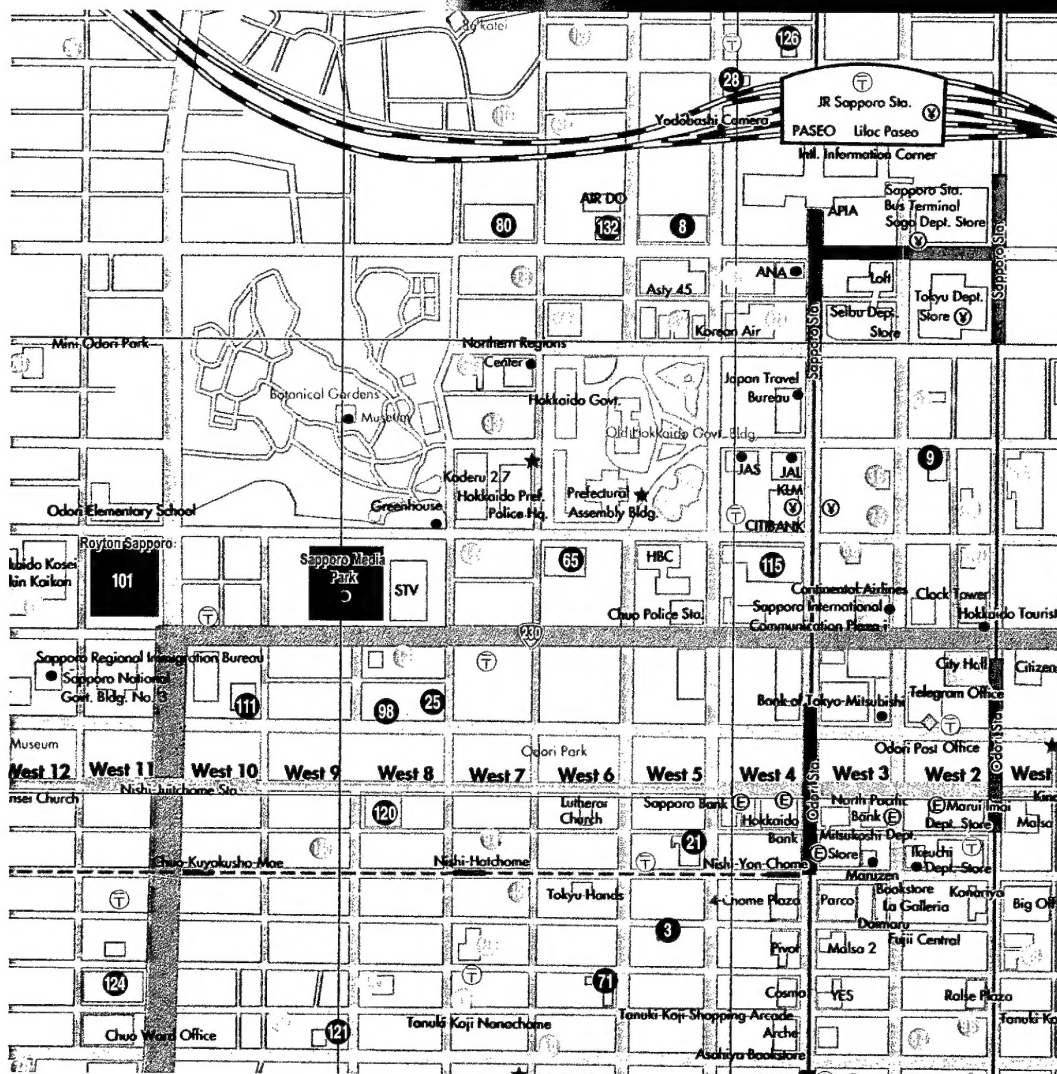
		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Royton Hall
<b>Mon Oct 2</b>	9:30-10:50	S16: Ionosphere- Thermosphere- Mesopause Coupling	S3: CMEs and Coronal Holes	S6: Comparison of Observations and Simulations of Global Magnetospheric Structure	S9: Energetic Particle Dynamics in the Inner Magnetosphere	S14: Wave- Particle Interactions at Shocks and Boundary Layers	S7: Tail Plasma Flows and Ionospheric Consequences	
	Break							
	11:10-12:30							
	Lunch							
	14:00-15:20	S16: Ionosphere- Thermosphere- Mesopause Coupling	S3: CMEs and Coronal Holes	S6: Comparison of Observations and Simulations of Global Magnetospheric Structure	S9: Energetic Particle Dynamics in the Inner Magnetosphere	S14: Wave- Particle Interactions at Shocks and Boundary Layers	S7: Tail Plasma Flows and Ionospheric Consequences	
	Break							
	15:40-17:20							
	18:00-20:00	Welcoming Party						
<b>Tue Oct 3</b>	8:30-9:30							Tutorial 1
	9:30-10:50	S17: Middle Atmosphere	S4: Interplanetary Disturbances	S1: Space Weather: Prediction Techniques	S13: Aurora Dynamics and Plasma Wave Emissions	S10: Magnetic Reconnection: Theory and Simulations	S5: Solar Wind Effects on Ionospheric Convection	S16: Ionosphere- Thermosphere- Mesopause Coupling
	Break							
	11:10-12:30	Including Response to Forcing From Above and Below						
	Lunch							
	14:00-15:20	S17: Middle Atmosphere	S4: Interplanetary Disturbances	S1: Space Weather: Prediction Techniques	S13: Aurora Dynamics and Plasma Wave Emissions	S10: Magnetic Reconnection: Theory and Simulations	S5: Solar Wind Effects on Ionospheric Convection	S16: Ionosphere- Thermosphere- Mesopause Coupling
	Break							
	15:40-17:20	Including Response to Forcing From Above and Below						
	17:00-21:30	W1: Space Weather Observation in Future (17:00-19:30)		W2: Satellite Anomalies (17:00-19:00)	PURAES Meeting (17:00-19:00)	LRPC Open Meeting. (19:30-21:30)	W3: April-May 1998 / September 1999 Events (17:20-21:00)	
<b>Wed Oct 4</b>	8:30-12:00	Poster Session: S1, S3, S4, S6, S7, S9, S13, S14, S16 (Sapporo Media Park)						
	Lunch							
	13:30-18:00	Excursion						
	18:00-20:00	Conference Dinner						
<b>Thu Oct 5</b>	8:30-9:30							Tutorial 2
	9:30-12:30	Poster Session: S2, S5, S8, S10, S11, S12, S15, S17, S18, S19, W1, W2 (Sapporo Media Park)						
	Lunch							
	14:00-15:20	S17: Middle Atmosphere	S8: Storm-Time Ring Current	S2: Space Weather	S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena	S11: Cross-Scale Coupling: Observations and Theories	S5: Solar Wind Effects on Ionospheric Convection	S12: ULF and VLF Waves in the Magnetosphere
	Break							
	15:40-17:20	Including Response to Forcing From Above and Below						
	17:00-21:30	W1: Space Weather Observation in Future (17:00-19:00)		W2: Satellite Anomalies (17:00-19:00)			W3: April-May 1998 / September 1999 Events (17:20-21:00)	
<b>Fri Oct 6</b>	8:30-9:30							Tutorial 3
	9:30-10:50	S18: Solar Variability Effects Upon the Lower Atmosphere and Climate	S8: Storm-Time Ring Current	S2: Space Weather	S19: Active Experiments and Spacecraft- Environment Interactions	S11: Cross-Scale Coupling: Observations and Theories	S12: ULF and VLF Waves in the Magnetosphere	
	Break							
	11:10-12:30							
	Lunch							
	14:00-15:20	S18: Solar Variability Effects Upon the Lower Atmosphere and Climate	S8: Storm-Time Ring Current	S2: Space Weather	S19: Active Experiments and Spacecraft- Environment Interactions	S15: Kinetic Theory and Simulations of Micro and Meso Scale Phenomena	S12: ULF and VLF Waves in the Magnetosphere	
	Break							
	15:40-17:20							

Tutorial 1: Solar-Terrestrial Physics - Past Achievements and Future Opportunities / Daniel N. Baker

Tutorial 2: Global Circulation of the Middle Atmosphere / Isamu Hirota

Tutorial 3: Sun-Earth Coupling and Possible Effects on Earth's Climate / Eigil Friis-Christensen





Number	Hotel
3	Arimax Hotel 303 Sapporo
8	Century Royal Hotel
9	Chisan Hotel Sapporo Honkan
21	Hotel Alpha Sapporo
25	Hotel Center Park
28	Hotel Crest Sapporo
65	Hotel Sapporo Garden Palace
71	Hotel Sun Route New Sapporo
80	Keio Plaza Hotel
98	Sapporo Odorikoen Hotel
101	Royton Sapporo
111	Sapporo Daiichi Hotel
115	Sapporo Grand Hotel
120	Sapporo Korakuen Hotel
121	Sapporo Luna Hotel
124	Sapporo Prince Hotel
126	Sapporo Station Hotel
132	Sapporo Washington Hotel II